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NOTICE
MEDICAL
OBSERVATIONS

ON

CANCER,

CONNECTED WITH

HISTORIES OF THE DISEASE.

BY

EVERARD HOME, Esq. F. R. S.

SURGEON TO ST. GEORGE'S HOSPITAL.

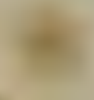
LONDON:

PRINTED BY W. BULMER AND CO. CLEVELAND
ROW, ST. JAMES'S;

FOR G. AND W. NICOL, BOOKSELLERS TO HIS MAJESTY,
PALL MALL; AND J. JOHNSON, ST. PAUL'S
CHURCH YARD.

1805.

2000
1850



TO

DOCTOR THOMAS DENMAN.

DEAR SIR,

THE subject of the following pages is one in which you have taken a particular interest, and have employed every means in your power to promote its investigation. It was at your request that I applied myself more closely to the enquiry; and it is with a view to second your humane and zealous exertions, that I now lay my observations before the public.

Had not these reasons led me to address this work to you, many acts of early kindness and friendship, which are deeply impressed upon my mind, would have induced me to take this public opportunity of acknowledging them.

I remain, Dear Sir,

Your much obliged,

and very sincere friend,

EVERARD HOME.

Sackville Street.

Jan. 30th, 1805.

INTRODUCTION.

ALTHOUGH Cancer is a disease which has long been under the observation of surgeons, and is of daily occurrence; although it is met with in all ranks of society, and is more destructive than any other surgical complaint, we are even now unacquainted with its nature, and without any effectual means of preventing it from taking place, or putting a stop to its progress, when once it has begun.

The most rational mode of diffusing the knowledge necessary for these purposes is, that those practitioners who have had considerable opportunities of contemplating the disease, under its different circumstances, should lay before the public the facts they have collected, and the observations they

have made upon them. In this way, a fund of accurate observations will be formed, by means of which some person, whose sagacity shall fit him for the task, may be found capable of discovering not only the cause, but a remedy for this dreadful disease.

Cancer is a disease which must engage the attention of every practitioner in surgery, in a greater or less degree; for even those who have no particular turn for investigation, must be led, by feelings of humanity, to employ their minds upon the consideration of a complaint, which so frequently baffles all their skill, and destroys such numbers of both sexes, but more particularly females.

It is a truth, which cannot be denied, that in so extensive a field as surgery, those diseases for which we have no cure, are commonly neglected by the professors of the art: they are left in despair, for others, which, being more manageable, are attended to with infinitely more satisfaction.

This is productive of two evils; the obscure diseases remain uninvestigated, no approach being made towards discovering remedies for them; and the patients become a prey to mercenary empirics.

If the following observations shall be found to throw any light upon the dreadful disease of cancer, establish any point not completely ascertained, or invite other surgeons to contribute the result of their enquiries, to a general fund of information, I shall consider myself as amply rewarded for my labour.

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ON
C A N C E R.

CHAPTER I.

CASES OF CANCER, THE ORIGIN OF WHICH
WAS ASCERTAINED.

CASE I.

JOBSON WALLACE, a married man, 37 years of age, stout made, subject to no general or particular complaints, and by profession a sailor, was admitted into St. George's Hospital, under my care, November 18th, 1803. About four years since, during a violent storm at sea, the main-top mast was shivered, and the upper portion was swinging

backwards and forwards. It was necessary to cut away the upper piece, and Wallace was sent aloft for that purpose. He had on a pair of loose trousers at the time. The rolling of the ship was very great, which increased the motion of the mast, and while he was clinging to the standing part, his glans penis was caught between it and the loose piece; he immediately fainted away, and fell into the round top, from whence he was carried to the deck. On recovering, he was informed by his companions, that when they first took him up, his glans penis was as flat as a half-crown. The body of the penis, and both testicles, as well as the glans, began to inflame and swell, and were extremely painful. He kept his bed for three weeks, at the end of which time, the glans had recovered its natural size and figure, having only a small pimple on that part to which the frænum is attached: this was considered of no consequence, and was not at all troublesome, until his arrival in England

six months afterwards, when it began to ulcerate, and become very painful. It is proper to remark here, that he never had the venereal disease, and from the time of the accident, never had intercourse with his wife or any other woman.

The ulceration spread, and gradually extended itself all round the corona glandis; and the glans penis itself began to enlarge and become hard and irregular in its figure, accompanied with shooting pain through its substance, and along the body of the penis towards the perinæum. His general health was not affected. He has been under the care of several practitioners, without deriving the least relief; on the contrary, thought his complaint considerably aggravated by the various modes of treatment adopted; particularly by a course of mercury, which occasioned a high degree of salivation for nine weeks, during the whole of which time he was made to keep his bed. On the 10th September, 1803, he was received into the

Lock Hospital. The diameter of the glans penis at that time was nearly $1\frac{3}{4}$ of an inch; the surface was ulcerated, and discharged a thin watery fluid sometimes tinged with blood. The glans was entirely denuded, and at the posterior part, the prepuce seemed to be intimately united to it, and assumed somewhat of a dark purple colour. He had at that time darting pains in the glans, although not constantly; but complained of a hot pungent sensation on the surface, which had continued for three or four months, so as to deprive him of sleep. The body of the penis appeared perfectly free from disease. Some of the glands in the left groin had begun to enlarge and become indurated, though not painful. They formed a prominent tumour about the size of a common egg, feeling like a cluster of marbles under the skin. The integuments covering them were not affected; they were moveable under them. A single gland in the right groin had begun to

enlarge, and felt exactly like one of those in the left. He had no pain when the penis was in a state of erection; had occasional nocturnal emissions, attended with the usual sensations.

Sept. 16th. Finely levigated Creta ppt. was used as a local application, sprinkled on the sore twice a day, as thick as it would lie.

17th. This application gave a degree of ease, which he had not experienced for months. There was no visible alteration in the appearance of the sore.

19th. A slight discharge, of a dark colour, took place from the surface, which rendered the part still more easy: the pungent pain now left him: the sore looked cleaner.

23d. The size, as well as the hardness of the tumour was somewhat diminished; and the discoloration of the integuments behind it had disappeared.

Oct. 2d. The hardness and size of the tumour had undergone some small change for the better.

Oct. 10th. The matter secreted by the ulcer was less in quantity; he was free from pain; and there was an appearance of new cuticle on the edges of the sore. The tumours in the groins continued as hard and as large as ever.

Oct. 15th. The quantity of discharge continued to diminish, and new cuticle had begun to extend itself over that part of the sore next the body of the penis. He had occasionally slight pain in the glands in the left groin.

Oct. 27. He had yesterday a severe pain in the glands in the left groin, attended with throbbing and shooting into the upper and inner part of the thigh; but which, after 12 hours, in some measure left him. The glands in that groin were more enlarged. The appearance on the glans penis continued favourable, and more new cuticle had formed. Since the pain in the glans subsided, the nocturnal emissions had been more frequent.

Nov. 1st. A small fluctuation could be distinctly felt in the most projecting part of

the tumour in the left groin, which continued painful, though in a less degree.

Nov. 10th. The cicatrization of the glans had advanced but very slowly. The tumour in the left groin was less: the pain still continued, but the fluid in it had not appeared to increase in quantity.

Nov. 15th. A small spot about the size of a silver penny on the anterior part of the glans, within the last two days became foul and sloughy, and the skinning process seemed to have stopt. He had throbbing pain in the glands in the left groin, but the fluid was not perceptibly increased. The spot, which began to spread, had remained hard ever since the time of the accident.*

Nov. 18th. He was removed from the Lock into St. George's Hospital, under my care. At that time the glans penis had the appearance of a cancerous tumour, with a small deep ulceration in the anterior part of

* The history of the case, while in the Lock, is taken from the notes of Mr. Jeffreys, House Surgeon to that hospital.

it; and all round a tuberculated margin, forming a thick ridge, partly covered with a thin cuticle, which is an appearance I consider as peculiar to cancer. With this view of the case, I directed a poultice to be applied, made of a saturated solution of arsenic in water, diluted in the proportion of a drachm to a quart of water; and to take three drops of the strong solution three times a day.

On the 25th. A small slough separated from the glans, and he lost half a pint of blood; this was stopped by *oleum terebinthinæ*, locally applied. A common poultice now used.

Nov. 28th. The internal use of arsenic brought on pain in the bowels: the tumours in the groins became larger and softer.

Dec. 4th. The whole of the penis was less swollen, and the ulcer looked cleaner. The tumour in the left groin was inflamed: it was ordered to be poulticed, and one grain of opium taken at night.

Dec. 8th. The internal use of the solution of arsenic had been left off for some

days ; the pain and ulceration of the glans appeared to have increased ; the discharge was thin, and very copious ; it excoriated the surrounding parts, so as to require their being bathed several times in the day with warm water.

Dec. 15th. His nights were very restless. The ulcer continued to spread. The arsenic was again given internally ; and the common poultice applied both to the glans and groin.

Dec. 17th. The tumour in the left groin was more inflamed and painful ; and there was a slight excoriation over the most prominent part of it.

Dec. 20th. The pain was less, but the ulcer was spreading : the warmth of the poultice gave temporary relief.

Dec. 23d. The ulcer had become exceedingly painful ; the progress of the ulceration in the groin was extremely slow.

Dec. 26th. The most prominent part of the tumour in the groin had given way, and

exposed the cellular membrane under it, which was in a sloughy state, yielding little or no discharge. The pain was still severe.

Dec. 28th. The whole of the skin covering the glands in the left groin, had become inflamed: the sore was half an inch square, very superficial, and spreading slowly. The ulcer on the penis looked more florid, and discharged less. His general health had begun to fall off. The solution of arsenic was continued internally, and the common poultice to the sores.

Jan. 1st. A slight bleeding took place from the sore in the left groin, which was soon stopped by pressure. The sore had increased in breadth.

Jan. 3d. He had another bleeding from the groin: the blood, from its colour, appeared arterial. Discontinued the opium at night, for fear of bleeding coming on during sleep.

Jan. 5th. There was a slight bleeding from the groin. All medicines were left off,

and a common poultice was applied to the sore in the groin, and to the penis.

Jan. 8th. A fresh ulceration had taken place in the skin of the groin, at a little distance from the former opening. He had no relish for food, and his sleep was disturbed.

Jan. 10th. The tumour in the groin continued increasing in size, but was softer. He was confined entirely to bed.

Jan. 12th. The pain in the groin had been very severe. Took one drachm of bark three times a day.

Jan. 14th. The ulceration in the groin continued to spread, and become deeper; a bleeding came on in the night, which was stopped by the application of oleum terebinthinæ.

Jan. 17th. Several new openings had taken place in the tumour in the groin; the original one was much increased in size, and there was a considerable bleeding from it on the night of the 16th.

Jan. 23d. The discharge from the ulcer on the glans, and that in the groin, was thin and offensive; the openings in the latter had increased in size, and were very painful. There was a slight bleeding from one of them in the night.

Jan. 27th. His general health was improved, and his sleep less interrupted.

Jan. 29th. He became very low and faint, in consequence of having lost about a pint of blood in the morning.

On the night of the 30th, had a shivering fit, which lasted for an hour, and was succeeded by a cold clammy sweat; after which he remained in a state bordering on insensibility. The bark was given twice a day, and the poultices continued to the sores.

Feb. 2d. He lost about a tea cup full of blood.

Feb. 6th. The ulceration in the groin was nearly an inch in depth; and there were sinuses running upwards and downwards

from this sore, which discharged a large quantity of a thin, watery, colourless fluid. The sores in the groin were easier; but that on the glans was still very painful, and had undergone very little change in its appearance.

Feb. 10th. The sore in the groin continued to spread.

The 19th. Had a bleeding in the night, which, after he had lost about half a pint of blood, was stopped, by means of the oleum terebinthinæ, and pressure. The ulceration had extended considerably towards the angle of the thigh: the edges of the sore were much thickened and turned outwards.

Feb. 21st. The sore in the groin was rapidly spreading; the edges were very irregular, hard, and projecting about an inch above the level of the surrounding sound skin. He had two more bleedings, one when changing the dressings, the other when going to stool: had no appetite for food, was very weak, perspired much, and

slept badly. These symptoms had increased upon him so much, in addition to a recurrence of the pain in the glans, as to confine him entirely to bed.

On the 26th, the ulcer bled three different times; once in the morning; again when sitting up to drink; and when going to stool. The bleeding was not from any one vessel, but from the whole surface; and from its florid colour appeared to be arterial.

March 4th. The sore in the groin continued to increase in size.

On the 8th, in the morning, he had a slight return of the hemorrhage from the groin. The discharge was thin and copious.

March 15th. The pain in the left groin was so considerable as to deprive him of sleep.

March 19th. The sore in the left groin had increased in size, the discharge was less, and the pain was very great.

March 22d. The pain in the left groin more severe than he had ever felt it.

The tumours in the right groin, which had been stationary for months, began to increase in size.

March 26th. The sore in the left groin had increased to four inches in length, and nearly two in breadth; with the edges thick, hard, and projecting an inch and a half above the level of the surrounding parts. The pain in this groin continued very severe, and always worse at night.

April 3d. Complained of great heat in the glans penis, which was harder than usual. The ulcer in the left groin was extremely painful, and had increased in all directions; and the integuments surrounding it were inflamed. The poultice was continued to the sores, and the bark was given internally.

April 7th. The penis and scrotum had become œdematous, and he complained of the pain in the glans.

April 11th. The pain in the ulcer in the groin was very violent, particularly at night.

Equal parts of decoction of poppies and proof spirit were applied to the sores, instead of the poultice.

April 15th. The pain was diminished, but the discharge great, although less irritating.

On the 18th, complained of occasional pain in the lower part of the abdomen. The pain in the groin was at times very severe. He remarked, that the pain was always less when the discharge was greatest.

April 25th. The glans penis had become less painful, but continued very hard. The discharge from the ulcer in the groin was a little thicker.

On the 29th, the pain in the glans was less severe; and a small part of the edge of the ulcer had skinned over: perspired much at night; but slept better than he had done since he came to the hospital.

May 4th. The sore in the groin had increased in size, but was less painful.

On the 13th, the sore in the left groin

measured rather more, so that it was five inches in length, and two inches and a half deep; that is, from the highest part of the edge of the ulcer, which was raised one inch and a half above the level of the surrounding sound parts, and two inches broad.

May 19th. He complained of heat and soreness in the glans; perspired profusely in the night, for which he took diluted vitriolic acid, 15 drops three times a day.

On the 23d, a slight bleeding took place from the edges of the ulcer in the groin, when straining at stool.

May 28th. The cellular membrane of the prepuce had become oedematous, so as to extend the prepuce over the glans, and obstruct the flow of the urine.

June 4th. He had shooting pains across the lower part of the abdomen. The sore in the left groin had increased in size. The tumours in the right groin were a little enlarged, but not attended with pain.

June 8th. The ulcer in the left groin

discharged a great deal of the thin watery fluid, which excoriated the side of the scrotum. The glans penis was quite concealed under the swelled prepuce, and he had a good deal of pain in it. His general health was better.

On the 14th of June, the length of the sore in the left groin was ten inches ; at the broadest part it measured three inches ; the circumference of the base nineteen inches. The sore was divided by a transverse ridge, composed of a fungous excrescence. The lowest portion of the sore was two inches and a half deep ; the upper portion half that depth. The thickened ridge which surrounded the ulcer, and that which went across it, were covered by a purpleish coloured cuticle. In the substance of these diseased ridges, near their base, a great number of small tumours had formed ; they were met with in different stages, some in a state of suppuration, others not so far advanced : at first they discharged a small quantity of thick

matter, then a thin watery fluid in considerable quantity ; after which a fungus shot out from the edges, which in a few days became partially covered by a thin cuticle.

18th. The glands in the right groin had enlarged considerably, but were less inflamed than for some time before. He complained of a violent shooting pain across the lower part of the abdomen.

23d. The glans had a stony hardness to the feel, and a pain shot up from it through the body of the penis.

On the 27th, the glands in the right groin had enlarged, so as to raise the integuments so much from the symphysis pubis that the bone could not be felt. The bottom of the ulcer in the left groin had put on a sloughy appearance.

July 2d. He had an oozing of blood from the whole of the surface of the ulcer in the left groin ; the transverse ridge of fungus was beginning to slough, and there was a considerable quantity of thin discharge, but

not so much pain: complained of severe pain in the lower part of the abdomen.

By the 11th, the whole of the transverse band of fungus had sloughed away, so that there was one long deep chasm, extending from the spine of the os ileum down to the perineum; the bottom of a fiery red colour, and the surface bled when touched. The glands in the right groin continued to increase in size, but gave no pain. The pain was confined to the lower part of the abdomen. The thin watery discharge had been very considerable, but began now gradually to diminish.

July 21st. There was barely sufficient discharge to moisten the lint with which the sore was dressed. In proportion as the discharge diminished, the pain in the sore increased; and he was obliged to have recourse to one grain of opium at night, to relieve it, and procure sleep. The glands in the right groin continued inflamed, and increasing in size. He had great pain in the abdomen;

his general health was declining fast, and he had become so weak, that it was necessary to assist him in getting out of bed to go to stool.

July 30th. The left thigh had become swelled; and the sore in that groin measured ten inches and a half in length, and four inches in breadth: the discharge was thick, and in very small quantity, and the pain very severe.

August 5th. A small livid tumour, of an oval form, appeared in the skin, half way between the right groin and the navel. He had great pain in the left groin, and in the glans penis. The basis of the tumour in the right groin appeared to be about four inches in diameter; and the skin, covering the most prominent part of it was in a high state of inflammation. The left thigh continued much swollen.

On the 12th, the bottom of the sore in the left groin began to have a brown appearance.

August 20th. A slough was nearly separated from it, attended with a watery discharge ; at which he seemed much pleased, as he said he was sure he should be relieved from the excruciating pain which he had been suffering. He was very weak, and the skin of his face had acquired a dirty yellow colour.

On the 30th, a considerable portion of the sore in the left groin was in a sloughy state; the watery discharge was in considerable quantity, and the pain much less in the groin, but severe in the glans penis, which had undergone no apparent change. The glands in the right groin continued increasing in size, but the inflamed skin had become so thin, that the small branches of the blood vessels could be seen through it. At the upper part of the left thigh, near the edge of the sore, there was a number of small livid tumours in the skin.

Sept. 6th. The sore in the left groin continued in a sloughy state, and the watery

discharge was considerable. The bottom of the sore had become wider, and its edges turned more out. The abdomen was so extremely painful, that he could not bear it to be touched. The swelling of the left thigh and leg had begun to subside.

Sept. 12th. The sloughs in the sore in the left groin had begun to separate, and the ulcer had become cleaner, the discharge thicker, and the pain much increased. The granulations had a more than usually livid appearance. The tumour in the right groin continued to increase, and he had pain in it. He was so weak that he could hardly move in bed. In the skin, covering the lower part of the abdomen and upper part of the thigh, near the sore, a number of small tumours were to be felt: some of the largest were of a dark bluish colour; others not at all discoloured.

Sept. 18th. A small slough appeared on the ridge which formed the edge of the sore in the left groin, nearest the pubes, which

separated on the 22d, leaving this part of the sore nearly on a level with the surrounding sound parts.

On the 24th, the tumor in the right groin broke, and discharged a small quantity of thick matter. Fresh sloughs formed in various parts of the sore in the left groin.

Sept. 30th. The sore in the right groin was upwards of an inch in diameter. Both groins now discharged an immense quantity of thin watery fluid: he suffered very little pain from the sores, but a great deal in the abdomen. He was hardly able to move off his back; but still he eat tolerably well, and drank porter, and his bowels were regular.

Oct. 3d. The glans penis, which had remained stationary for a considerable time, had assumed a sloughy appearance, and discharged a thin fluid in large quantity. The sore in the left groin had extended considerably towards the symphysis pubis; and its edges had become lower in several places. The sore in the right groin had increased in

all directions, and measured upwards of two inches across. The left leg and foot were still œdematous. The pulse at the wrist was hardly perceptible; his feet and hands were cold; his tongue brown and parched; his breathing difficult, and his voice almost entirely gone. He continued, however, to have stools regularly, and was perfectly sensible.

In this state he lingered on till the 12th of October, when he expired at five o'clock in the morning.

The body was examined nine hours after death, and the following were the appearances.

On opening into the cavity of the abdomen, the peritoneum, which lines the abdominal muscles between the pubes and the navel, was studded over with small white opaque bodies, of a firm consistence. Immediately within the abdominal ring, the lymphatic glands were in a diseased state: on the left side there were two of the size of chesnuts; and on the right there were three

of the same size : a chain of diseased glands of different sizes was traced from these round the margin of the pelvis to the lumbar vertebræ. On the anterior surface of these bones they formed a solid mass, an inch and a half in thickness, completely surrounding the aorta and vena cava. They were met with as high as the sixth dorsal vertebra, gradually diminishing in size and number to that part ; but none could be discovered on the anterior part of the spine, higher up.

There was a large cluster of similarly diseased glands at the root of the mesentery, and a few were met with in the mesentery.

The psoas muscle of the left side, in which the diseased glands were in the greatest number, was studded over by small oval white bodies of a firm consistence, not much larger than millet seed, the interstices between them not exceeding one eighth of an inch. On cutting into the substance of the muscle, the interstices between the fasciculi of muscular fibres contained a number of the

same substances; they appeared to be evidently connected with the diseased state of the lymphatic system.

These glands, when cut open, presented different appearances: those nearest the groins contained a soft white substance, of the consistence of thick cream; and those higher up in the loins were harder and more solid.

The liver was studded over on both its surfaces with flattened hard irregular bodies of different sizes, from that of a silver penny to that of a shilling: their internal substance, when cut into, was similar to that found in the glands above described.

The other viscera contained in the cavity of the abdomen, had their natural appearance.

Upon examining the thorax, the lungs were found in a healthy state; the heart was rather smaller than it is usually met with. On the anterior part of the diaphragm there were several tumours of the size of chesnuts;

and on different parts of the pleura, in both sides of the chest, smaller tumours were met with; all of these resembled, in their internal texture, the diseased glands in the loins.

I have two cases of cancer of the penis now under my care, the progress of which is very similar to that above described. In both of these the disease began in the prepuce, and extended itself to the glans, which is by far the more common origin of the disease. Mr. Hey* has given so many accurate histories of cancer of the penis, arising from this cause, as to make any addition to them superfluous.

* Hey's Practical Observations in Surgery, illustrated with Cases.

CASE II.

A GENTLEMAN, 49 years of age, of a thin spare habit, who, after residing 20 years in India, had returned to Europe about 12 years, was walking, in the month of May, 1801, in a pair of tight new shoes, the left foot was so pressed, that he could not rest it on the ground without great pain. When he returned from a walk of four hours, in the London streets, in which his mind had been so much occupied by business that he had not attended to his foot, he felt as if something had started in the middle of it; and, on taking off the shoe, and examining the part, found a small lump, the size of a pea, perfectly moveable, lying over the space between the metatarsal bones of the third and fourth toe, immediately under the skin. As it gave no pain, little attention was paid to it. In about three months it was found

to increase in size, and I was consulted about the best mode of treating it. The small tumour appeared to be a ganglion, but had no perceptible fluctuation: it was directed to be rubbed with an ointment composed of camphire and mercury. Under this treatment it continued to increase in size; and, in April 1802, I was again consulted. It had arrived at the size of a pullet's egg, and had acquired a more rapid growth, which made it necessary to remove it by the knife. This was done, with the assistance of Mr. Cline. A longitudinal incision in the direction of the foot, was made through the skin, of sufficient length to admit of the tumour being dissected out. Although the tumour, when examined through the skin, appeared to be moveable upon the parts beneath, it was found in the operation, to dip down between the bones, and to have an attachment to the metatarsal bone of the third toe. When removed and examined, no part of the tumour was deficient: it was, therefore, concluded to be

completely taken out; and the sides of the wounded skin were brought together, so as to prevent exposure of the tendons, which would have protracted the cure, if not attended with worse consequences.

The tumour was of an oval form, uniform in structure, of a consistence between ligament and cartilage: when cut through, its substance was white, and appeared to be made up of concentric circles.

It was four months before the wound was completely healed; and the cicatrix which formed, had a tumid appearance, and was harder than the surrounding parts. He never recovered the free motion of the foot. In about two months from the time the sore was healed, there was an evident enlargement, which, by its increase over the space between the metatarsal bones of the third and fourth toes, shewed that it was a return of the tumour; the part from which it originated not having been destroyed. This second swelling was not moveable, but seemed

connected with the bones; it was, therefore, proposed to dissect out the metatarsal bone of the third toe, along with the tumour, as the only mode of preventing a recurrence of the disease. Before this was acceded to, many circumstances occurred in the patient's private affairs, which induced him to put it off. The tumour continued to increase, and in eight months the skin became so much stretched, that ulceration took place. After the breaking of the skin, the tumour became painful, and the surface had a less compact appearance, throwing out a kind of fungous excrescence, which did not longer admit of its being left to itself. All operations by the knife, except the removal of the limb, were now out of the question; and, as this was a last resource, it was proposed to attempt the destruction of the tumour by means of external applications.

The tumour had now arrived at the size of a cube of three inches, firmly attached at its base, with an ulcerated surface on the top,

of an inch and a half in diameter. On the 1st of Oct. 1803, the ulcer was covered over with a powder, consisting of equal parts of white arsenic and sulphur. This gave a good deal of pain, but not intensely severe; and next day had nearly subsided, leaving, however, the pain belonging to the tumour, which was of the teasing, wearing kind. On the 1st of November the tumour appeared shrunk; the parts in contact with the arsenic had become as hard as a board, and a line of separation was distinctly marked out, all round the deadened portion of the tumour. This separation daily increased, although very slowly. The discharge from this ulcerated surface was not matter, but a thin acrid fluid as limpid as water, and in quantity infinitely more abundant than the usual quantity of pus produced by an ulcer of the same extent.

Nov. 22d. I was enabled to separate the deadened part, a mass weighing fourteen ounces; the surface which became exposed

had a radiated structure, similar to that which was removed.

Nov. 29th. A fresh application of the arsenical powder was now made to the exposed surface; and it was evident that the tumour had increased since the 22d. After this application a severe pain came on in the abdomen, followed by purging. In eight days there came away another portion of the tumour, weighing four ounces; but this must have been deadened, in part, by the first application of the arsenic. The purging still continued.

Dec. 18th. The purging had ceased, and the patient's general health sufficiently recovered to admit of another application of the powder, which was now made over the whole of the exposed surface. Two hours after the powder was applied, he had a return of pain in the abdomen, and purging, which was so violent as to reduce exceedingly his general strength.

Dec. 30th. There was no appearance of

any separation of a fresh slough, but the sole of the foot hot and red, and a tucking in of a small portion of the skin, directly opposite where the last slough separated, forming a small infundibular pit.

Jan. 4th. The tumour appearing to increase under the deadened surface, and no slough coming away, at the same time the effects of the arsenic upon the constitution having proved so violent, it was not judged right to repeat the application. Under these circumstances it was proposed to try the effects of the kali purum, which was applied to the middle of the exposed surface of the tumour. It gave little or no pain, and the surrounding parts had an healthy appearance.

Jan. 11th. A few thin sloughs had separated; but under these the tumour had considerably increased; and where the fungous excrescences had come in contact with the granulations of the healthy surrounding parts, they had given to them the same disposition,

and the same luxuriant growth; so that a similar tumour-like structure was established upon them. This appearance made me give up all hope of benefit from any application; and the tucking in of the sole of the foot had now increased so much as to make a deep pit, the skin at that part having been drawn in by the tumour, and pulled up along with it, in the space between the two metatarsal bones. In the whole progress of the disease, there was an increased quantity of the limpid acrid discharge, which has already been taken notice of.

The patient was naturally desirous of making every effort which art could suggest, before he could consent to have the limb taken off; and as this mode, as well as the arsenic, had failed, the actual cautery was tried. It was applied on the 12th very freely, and continued till the pain became severe. It was again repeated on the 14th and 16th; but although it deadened completely the metatarsal bone, and burnt it

to a cinder, the fungus increased in every direction. It had little effect on his health, and the pain was less severe and of shorter continuance than from the other applications.

It was now proposed to try the effect of corrosive sublimate, mixed with flower made into troches, in a conical form : three of these, nearly an inch long, were introduced into the substance of the tumour. This was done on the 18th ; and, in an hour and a half after they were applied, he had a slight rigor, pain in the bowels, and purging.

Jan. 26th. Large sloughs separated, and it did appear that this application could at least keep the luxuriant fungus within bounds ; but, upon repeating the troches, the same rigor and attack upon the bowels came on ; and although the sloughs formed were large, the growth underneath was in the same proportion ; and towards the toes, where the edge of the skin was exposed, it had taken on the same diseased action, and

was throwing out a fungus similar to the tumour. His mouth also became sore, from the effects of the mercury; his flesh and strength very rapidly declined. Under these circumstances, on the 20th of February, all attempts, by local applications, were left off. He went into the country for the recovery of his health; and when the tumour was left to itself, although it certainly increased, the progress was much slower than under any of the applications which were made to it.

On the 13th of March the leg was amputated below the knee. The day after the removal of the disease, his constitution appeared to be relieved; and in two months the stump was healed, and his health established much beyond what it had been for some years before the tumour had begun to form.

When the tumour was divided in a longitudinal direction, nearly in the middle of its substance, the progress of the disease could

be distinctly ascertained. That part towards the tarsus was rounded, perfectly distinct from the surrounding parts, and retained the form of a tumour; but it had extended itself forwards towards the toes, and to the skin of the instep, having more the disposition to blend itself with the sound parts, and losing the defined edge. On the instep it had risen to the external surface, the skin having entirely disappeared; and below, at one part, it had extended to the sole, and had communicated its disposition to that portion of it, which was very small, not exceeding a quarter of an inch square, and had drawn up that part along with the tumour, forming a deep pit in the bottom of the foot. Where the tumour extended to the toes, the skin had united entirely with it; and upon its edge there was a continuance of the same fungus.

Upon an accurate examination of the section of this tumour, which had extended itself from the tarsus to the point of the fourth and little toe, every part of it had the

same striated texture which characterises the disease; but this was less distinct near the tarsus, and more strongly marked in the other parts of the tumour, particularly towards the circumference.

CHAPTER II.

CASES OF TUMOURS IN THE BREAST, WHICH WERE INDOLENT IN THEIR ORIGIN, BECOMING AFTERWARDS TRUE CANCER.

CASE III.

A LADY, 23 years of age, had a tumour in the breast, which was hard to the feel, and gave her pain occasionally. It had been noticed for about a year, and gave her a great degree of anxiety. Mr. Hunter was consulted, and gave it as his opinion that the tumour should be extirpated, as the only means of relieving the patient, believing it to be of a scirrhus nature. In compliance with his advice the operation was performed, and the tumour was taken out, with a considerable extent of the surrounding parts,

that every thing connected with the disease might be taken away.

Upon examining the tumour afterwards, it was found to be a hard solid tumour, perfectly distinct from the parts which inclosed it, having an investing membrane, to which it had only a slight attachment. He was therefore of opinion, that this tumour would never have become cancerous ; but, from the cases which have been stated, and others which will be adduced, there are strong grounds for believing, that in time, it might have become a true cancer.

CASE IV.

A LADY, 35 years of age, had two small tumours in the left breast, situated on the upper part, and at six inches distance from each other. I was consulted respecting their nature. They had given no pain nor uneasiness; and the only alarm they gave rise to, was respecting the future consequences.

The tumours were solid, round, and moveable, unconnected, as appeared to the touch, with the surrounding parts: I was therefore induced to believe that they were similar to the tumour in the last mentioned case, and gave it as my opinion, they were not of a malignant nature, and saw no reason for having recourse to an operation for their removal but advised that they should be carefully watched; and if it was found that they increased in size, it might be proper to extirpate them on that account only.

About two years after I was consulted again. The tumours had not enlarged to any degree, but had become painful at particular times, more especially previous to menstruation; and, although not sensible to the touch, attended with a considerable degree of uneasiness. I was told that if I proposed an operation it would be immediately submitted to, and that the patient herself was rather desirous that they should be extirpated. From the cases No. 1 and 2, which had occurred since the first consultation, and had made a strong impression upon my mind, I now not only approved of an operation being performed, but strongly recommended it.

When the tumours were removed and examined, they were entirely circumscribed, and surrounded by an investing membrane, which had become extremely tense; and the moment the tumour was divided the internal parts expanded themselves, putting on the appearance of a spongy substance.

It is probable that the pain the patient suffered arose from this internal pressure, and that a continuance of it would have produced absorption of a part of the confining covering; and in that stage an excrescent fungus might have been produced.

CASE V.

A WOMAN came into St. Gorge's Hospital, who had a small tumour at the basis of the nipple, which was very moveable; often blood came by the ducts, which was the first symptom of the disease, and she discovered the tumour some time afterwards. It was removed with a good deal of the surrounding breast, and other parts. The tumour was found, upon examination, to be perfectly circumscribed, and appeared to be a new substance, not at all a part of the breast itself.

CASE VI.

A LADY, who lived in the Borough, had sometimes blood, oftentimes a bloody water, and at others a kind of matter oozing from the breast by the nipple, and this continued for several months before any swelling or lump could be felt; but at last a tumour formed, which increased, and the nipple ulcerated; the absorbent glands in the armpit afterwards swelled very considerably, producing all the symptoms of cancer, of which she died.

From the great similarity between this and the former case, there is every reason to believe, that if the tumour had not been removed, that also would, in time, have formed a true cancer.

CASE VII.

A LADY, when 45 years of age, had a cancer in her left breast, considerably advanced towards ulceration ; the glands in the armpit, and those above the clavicle, swelled and indurated ; great pain in the shoulder, in the back, and between the shoulders ; the arm much swelled.

When she was twenty-eight years of age, she had observed a small kernel in the breast, not larger than the end of the finger. It gave no pain, nor did it begin to enlarge for more than six years after. When she was about 35 she observed it to increase, and give some pain occasionally ; but for the last three years it has made a rapid progress towards its present state, which is that of a confirmed cancer.

CASE VIII.

THE following case appears to be similar in its origin and progress to some of those already mentioned.

A gentleman, about 35 years of age, had a tumour formed behind the angle of the lower jaw, which was considered as an enlarged lymphatic gland. This increased so much in size as to induce him to have it removed. Three years after, a second tumour was observed in nearly the same situation: this was slow in its increase, but gradually enlarged to the size of a pullet's egg. It was insensible to the touch, and gave neither pain nor uneasiness. While it was in this state he went to Vauxhall; and being engaged in a drunken squabble, received a violent blow with a stick upon the tumour. The blow produced no injury to the skin, but the tumour very rapidly increased, and

in a few weeks had doubled its original size. It was removed by Mr. Hunter, and afterwards examined. On making a section of it, the original tumour was white in its substance, and of an uniform texture; the part formed since the accident was spongy and soft, of a dark black appearance, resembling what is commonly termed a cancerous fungous excrescence, and an exact line, the whole breadth of the tumour, separated the two appearances.

This case occurred in the year 1787, and I find an observation added to my notes upon it, that the tumour in the neck of Mr. Gainsborough, the painter, which I had several opportunities of examining, and which was truly cancerous, and too far advanced before Mr. Hunter saw him, to admit of any operation, was, from the account he gave me, similar in its origin and progress to the case above stated.

CHAPTER III.

CASES OF CANCER IN THE BREAST, WHICH
ILLUSTRATE MANY OF THE SYMPTOMS OF
THE DISEASE.

CASE IX.

OF CANCER IN THE BREAST AT AN UNUSUALLY
EARLY AGE.

A LADY, when 15 years of age, received a blow on the right breast, from the elbow of one of her brothers: when the immediate effects of the accident went off, a little hard swelling remained, to which not much attention was paid. When she was about 20 years of age, it increased; and, by the time she was 27, it had become so large that she had it extirpated.

For three years and a half there were no signs of a recurrence of the disease, but about that time a swelling took place on the upper edge of the cicatrix; and four years after the operation, when she was 31 years of age, the swelling was larger than a hen's egg, and so near the surface of the skin as to shew its contents, which appeared of a light purple colour. As this consequent tumour appeared to be solitary, there was reason to believe it was the only part which had been contaminated, and therefore should have been removed; but whether the patient submitted to a second operation, or what was the termination of the case, has not been known.

CASE X.

OF CANCER IN THE BREAST, IN WHICH THE
PROGRESS OF THE DISEASE WAS UNUSUALLY
SLOW.

A WOMAN, 30 years of age, who was the mother of six children, had a tumour in her breast, which increased to the size of a large walnut, and was considered to be of a cancerous nature. This was extirpated by Mr. Hunter, and the patient went into the country. About two years afterwards she returned to town, having discovered a gland in the armpit which had enlarged, and was become painful. I was consulted about the propriety of removing this, and from the circumstance of there being only one gland at the end of that period, I thought the progress of contamination had been so slow as to give a reasonable prospect of success, and

this was removed. She continued well for two years more, when another gland, more deeply seated than the former, had enlarged. She applied to me a second time, and upon the same grounds I complied with her wishes in extirpating it. She went on well for three years, but at the end of that period the disease had attacked several other glands. Such was her desire to preserve her life, on account of her children, that she applied to me a third time, and requested me, if it could be done without the risk of her life, that I would remove these glands. I told her that if she asked me to do it, I would not withhold my assistance, as I believed the tumours might be safely removed; it was, at the same time, an operation of so much responsibility that my doing it was to be considered as an act of duty I would not refuse to perform; but not a proposal of my own. In the operation there was much difficulty, and many glands were found diseased higher up than could have been expected from any previous

examination. All those that had become enlarged were removed, and she recovered from the operation. The arm was much swollen for a fortnight or three weeks after it, but when the inflammation subsided, it went off. She returned into the country, but the disease still made progress, and in two years she died.

The progress of the disease, in seven years, was unusually slow ; and, as there is much reason to believe, from the evidence of other cases mentioned in the present work, that the operation, when performed too late, renders the disease more active than it would otherwise be, it is probable that her life would have been still further prolonged, had nothing been attempted for her relief, since the time was past in which it could have been done with success.

CASE XI.

OF CANCER IN THE BREAST, IN WHICH THE LYMPHATIC GLANDS TOWARDS THE CLAVICLE WERE THE ONLY ONES CONTAMINATED.

A LADY, 57 years of age, had a small tumour in the breast, which, when she first observed it, did not appear to exceed the size of a common pea. It gave no pain, and therefore caused no uneasiness. It remained nearly in the same state for two years; or if it had increased in size, that change had not been attended to. At this period the edge of the door of a wardrobe struck her forcibly just upon the part; and from that time she had occasional pain, and the tumour rapidly increased in size. It was allowed to go on for six months before I saw it. Upon examination

the tumour was situated on the upper part of the breast, above the nipple. From the size of the tumour and the connexion it had with the surrounding parts, it appeared to me too far advanced to admit of my urging an operation with any certainty of success, upon a mind not disposed to submit to it; although, at that time, had the patient requested it, I should certainly have performed it. I saw it occasionally, and found its progress very uniform; not at all in the course of the axilla, but in the direction of the glands above the clavicle. It continued gradually to enlarge for the next six months, when she was attacked with a violent inflammation in the lungs, which endangered her life. Upon her recovery from this illness, she found a great increase of the disease in her breast; and in another year, a second tumour formed below the clavicle, and two very small moveable ones, above it. At this period she applied to one of the cancer curers, who did not hesitate to

promise a complete cure in six months, by means of his caustic applications. Hearing of this, I requested him to call upon me, and state the grounds on which this promise was made. He said he could destroy the tumour; and there were none in the armpit. I asked if he had felt those above the clavicle. He said no: and if there were any there, he would not undertake the management of the case. I complimented him upon his candour, and my patient was spared the distress the applications would have produced.

In two years more the original tumour broke: this was about five years from the visible commencement of the complaint.

The ulcerated surface was about the size of half a crown, and discharged a limpid fluid in considerable quantity. The ulcer afterwards increased very fast, and the edges began to rise considerably above the ulcer. In two months a slight hæmorrhage took place, which was readily stopped; and, since

that time, every three weeks there has been a greater or less degree of bleeding: the largest quantity at any one time, about eight ounces. At the end of the sixth year, the ulcer is very large, and from the height of the fungous excrescence, which formed a margin to it, covered in part with an imperfect skin, it appeared of great depth. The second tumour is approaching to the skin, but has not broke. Her general health is very much impaired, the pain extremely severe, requiring two hundred drops of tincture of opium to be taken twice a day, to give her intervals of ease; but, even in this state, many months may elapse before she is relieved by the only probable termination of the disease.

CASE XII.

OF CANCER IN THE BREAST, ATTENDED WITH
A SWELLING OF THE ARM, FROM THE EF-
FECTS OF THE DISEASE ON THE GLANDS IN
THE AXILLA.

A LADY, between 50 and 60 years of age, who resided in the country, had a cancerous tumour in the breast, which was moveable upon the pectoral muscle; and the attending surgeon thought the case was such as to warrant the removal of the tumour by an operation. Mr. Cline was consulted about the propriety of its being performed; and, from examining the glands in the axilla, and finding them in a diseased state, objected to the operation. I was afterwards desired to meet Mr. Cline and the other surgeon,

but the patient did not come to town, so that I never saw her. At this time, however, which was about two months from the period in which Mr. Cline was first consulted, the arm had become very much swollen. This, in my opinion, was a sufficient reason against any operation being performed, and strengthened Mr. Cline in the decision he had come to, when first consulted. Both of us concluded that the swelling of the arm was a consequence of so many of the glands in the axilla being diseased, as to prevent the free return of the fluids in the arm through the lymphatic vessels. We were however unable to persuade the other surgeon that this was the case. He was satisfied that the swelling of the arm was only a sympathetic affection, and could readily be reduced. I said, if that was his opinion, I believed we should all very soon be of one mind upon what ought to be done; for I presumed he would not think of performing the operation while the

arm continued swelled; and neither Mr Cline nor myself would object to its being done after the arm had been reduced to the natural size, and continued for a week or ten days in that state. Mr. Cline acquiesced in this proposal. By means of bandages the arm was soon much reduced in size; but, upon leaving them off, began again to swell. The disease continued its progress, and in a few months the patient died.

CASE XIII.

OF CANCER IN THE BREAST, IN WHICH THE
SWELLING OF THE ARM, IN CONSEQUENCE
OF THE OPERATION, OCCASIONED THE PA-
TIENT'S DEATH

A WOMAN, aged about 40, had a cancer in the breast, which extended to the glands in the axilla ; but as far as could be discovered by external examination, the diseased glands were within reach, so as to admit of their being extirpated. This case occurred in the year 1775, a period at which surgeons were more sanguine in favour of the operation for this disease than at present, and ventured to perform it in cases which now would be considered much too far advanced to admit of it. Mr. Hunter performed the operation, and found a greater number of glands diseased

than had been expected: he however was able to remove all that had undergone any alteration in their structure, which included the whole axillary cluster. To come at them, he dissected round the axillary artery, which was laid bare for an inch in length. A few days after the operation, the arm began to swell, and increased in size every day, till it became so large as to be attended with violent pain, from the great tension of the skin, and remained in that state till she died, which was about three months from the time of the operation. The disease was found to have extended itself to the ribs and muscles of the chest.

CASE XIV.

OF CANCER IN THE BREAST, IN WHICH THE GLANDS TOWARDS THE STERNUM WERE AFFECTED, AND NO OTHERS.

A LADY, 72 years of age, consulted me on account of a cancer in the breast. There was an open sore, the size of a silver penny, between the nipple and sternum, and a gland as large as a nut close to the edge of the sternum, imbedded in the hollow between the fourth and fifth rib, so closely connected with the parts beneath as to admit of only a slight degree of motion, and that attended with pain.

She gave me the following history of her complaint. About four years before she had perceived a small tumour in the seat of the present sore, which gradually increased, and

in a period of two years and a half arrived at the size of a pullet's egg. This induced her to consult a surgeon respecting it. He pronounced it to be of a cancerous nature, and advised an operation, which was performed, and the wound united by the first intention. She considered herself as completely cured, and continued well for ten months; but a lump was then discovered near the sternum, which has increased in the last six months to the present size. The cicatrix of the wound made by the operation also broke out, forming a sore, which has since continued stationary, with nearly the present appearance. This is the only instance in which I have seen the cancerous poison absorbed in that direction; and there is every reason to believe that when it takes such a course the lungs are liable to be affected by it, an instance of which will be presently adduced.

CASE XV.

OF CANCER IN THE BREAST, IN WHICH THE
CONTAMINATION OF THE SKIN PRODUCED
SMALL TUMOURS OVER A GREAT PART OF
THE BODY.

A LADY, about 58 years of age, had a tumour in the breast, which had been gradually increasing in size for nine or ten years, and had affected the glands in the axilla, several of them being considerably enlarged; but the tumour itself made slow progress, even at this period not shewing any disposition to break. But the remarkable circumstance was, that in the neighbourhood of the tumour, to which the skin firmly adhered, and had the tucked-in appearance, which is considered as one of the true characteristic marks of cancer, there were several can-

cerous tumours in the substance of the skin, about the size of small split peas. At the time I saw the patient they were not confined to the neighbourhood of the tumour, although about nine or ten months before they were only seen there. They were now met with all over the body, not only on the same side with the diseased breast, but on the opposite side, and on the back and shoulders. They were nearly of the same size in these different situations, but rather larger near the seat of the original disease. In no place were they close to one another, but commonly an inch or more distant. They gave a considerable degree of uneasiness, and her general health was very much impaired. The disease in the breast had become extremely painful; her stomach with difficulty retained nourishment; and, occasionally, she had severe retchings to vomit; and in a few months died, without having any considerable change produced in the local appearances.

CASE XVI.

OF CANCER IN THE BREAST, IN WHICH THE TUMOUR WAS EXTIRPATED, AND THE CONTAMINATION AFTERWARDS AFFECTED THE SKIN; BUT DESTROYING THE PARTS PREVENTED THE FURTHER PROGRESS OF THE DISEASE.

A WOMAN, about 50 years of age, had a cancerous tumour in the breast, which had not increased to a large size, nor had produced any change in the state of the glands in the axilla; it was therefore thought advisable to have recourse to an operation. This case occurred in the year 1774, and the tumour was extirpated by Mr. Hunter. In the time of the healing of the wound, which was tedious, about four weeks from the

period at which the operation was performed, a small knot appeared in the edge of the skin, not much larger than a pin's head. In two days a second was observed, about three quarters of an inch from the other. These were increasing very rapidly in size, and were, on that account, destroyed by caustic. The whole healed and continued sound. As this person resided in London, I had an opportunity of knowing the result of the case, and found that she never had a return of the disease, but died about seven years afterwards of a dropsical complaint.

This is the only case I have known in which there was no recurrence of the disease, when it had produced these cancerous tumours in the skin; and it is highly probable that if the two small lumps had been left for a few days longer, they would have contaminated the surrounding skin, beyond the reach of an operation.

CASE XVII.

OF CANCER IN THE BREAST EXTENDING ITSELF
TO THE PECTORAL MUSCLE, AND PRODUC-
ING A DISEASE IN IT.

A LADY, about 43 years of age, who had several children, discovered, by accidentally putting her hand upon her breast, that there was a tumour in it. This led her to take the alarm, and assistance was immediately procured. As the tumour was perfectly moveable, and supposed not to be of long duration, the common means of resolving it by leeches, and internal medicines were had recourse to, but without effect; and, at the end of three months, I was consulted about the further means which it would be right to employ. Upon examining the tumour, I gave it as my opinion, that one only thing

remained to be done, and no time should be lost in resorting to it, which was the extirpation of the part. In this opinion I was confirmed by another surgeon, and the operation was acceded to. At the time the operation was performed, it appeared to move very readily on the pectoral muscle, upwards and downwards; but was more confined, in attempting to move it in the direction from the sternum to the axilla. There was no enlargement of the glands in the axilla, or in the neighbourhood of the clavicle. In the act of the operation, it was found that the tumour had attached itself to the pectoral muscle, and therefore a portion of the muscle was removed along with it, and no part was left that had undergone any alteration in structure from disease. Every thing went on well, and the wound was completely healed in about three weeks. In six months time, there was a fullness and hardness in the pectoral muscle, under the cicatrix; and in this part there was occa-

sionally pain. In a twelvemonth, the tumour had become prominent, putting the skin over it on the stretch; and the pain so severe as to be intolerable. Under these circumstances she put herself again under my care. I never saw any one suffer more torture. The tumour daily increased; and, upon her being seized with a vomiting, there was a discolouration on the lower part of it, so that the retching had burst some of the smaller vessels in it. Nothing gave relief, either used internally or externally. There was somewhat the feel of a deep-seated fluctuation, and the skin over one part had a bluish cast. In about a fortnight the skin gave way, a fungous excrescence shot out, mixed with coagulated blood, from parts of it giving way. This was so loose in its texture as to admit of being removed, which was done by the person who then attended, for I had declared myself unable to overcome the present symptoms; and there was not wanting one hardy enough to promise success, or, at least,

to insinuate the probability of it; and by so doing, give a temporary comfort to the patient, and relieved me from a most painful attendance. This fungous excrescence, resembling dark coagulated blood, daily increased, having a very small proportion of animal powers, and a very rapid growth; and in about three weeks from the time of its formation, the patient was relieved, by death, from the torturing sufferings of the disease.

In this case, the operation having been performed after the contamination had reached the pectoral muscle, and long before it produced any visible effects, it shews very distinctly the different appearances the same disease puts on in the mamma, in the first instance; and in the pectoral muscle, in the second; or, in other words, it explains the fungated sore, and the cancer, to be the effects of the same disease, only varying according to the structure of the parts which are attacked. In general, the cancer in the breast makes its way in the course of the

lymphatic glands, either towards the axilla or towards the clavicle; and in the few instances in which the pectoral muscle has been affected, surgeons have not had the opportunity which was afforded in this instance, of discriminating between the disease of the gland and that of the muscle, so as to ascertain the appearances which belonged to each. The state of the psoas muscle, described in the dissection annexed to the first case of the present volume, was probably the previous stage to throwing out the fungous excrescence; and is an appearance, which, I believe, has not been before described.

The cases of fungus hæmatodes, so faithfully stated by Mr. Hey of Leeds, throw great light upon this subject; and after a careful perusal of them, I have no difficulty in deciding that they were all cases of true cancer, in parts of a muscular or other structure, which was disposed to produce an excrescent fungus.

Cases of fungus hæmatodes are by no means uncommon in our London hospitals. They frequently are met with in the leg, sometimes in the thigh; and for the last twenty years, at St. George's hospital, the practice has always been to amputate the limb the moment the nature of the disease was ascertained. They differ from the cases of fungated sore, which will be presently related, by the looseness of the texture of the fungus, the readiness with which it breaks down and bleeds, and the rapidity with which the disease extends itself to the surrounding parts.

CASE XVIII.

OF CANCER IN THE BREAST, EXTENDING
ITSELF TO THE LUNGS, AND PRODUCING
DISEASE IN THEM.

A LADY had a tumour in the breast which appeared to be cancerous, and it was removed; but, as she had an uncommon affection of her breathing at the time, and the lump very large, it was suspected that they were both symptoms of the same disease; but, as the operation would give her the only chance of recovery, it was performed. No visible disease remained after the operation, and the progress of the wound went on very well; but the affection of her breathing became worse, yielding to nothing, but

liated a little by musk; and a month after the operation she died.

Upon examining the parts, after death, every part connected with the operation was found in a healthy state; no glands being found diseased; but the lungs, on both sides, were every where diseased, appearing like a solid mass, adhering universally to the ribs. Upon cutting into them, there was a number of tumours of different sizes, many of them not larger than peas, perfectly distinct from the surrounding parts; others much larger. Where they were small, the natural texture of the lungs could be distinguished; but where they were large, and had arrived at a species of suppuration, the whole of the lungs were broken down into one mass, and matter was found in the trachea.

The tumours, which were the size of a small egg, or even somewhat smaller; when cut open, had the appearance of being made up of a number of parts, in substance be-

tween jelly and cartilage, not unlike the internal structure of a shaddock. This was different from the smaller tumours, which were more fibrous. As all these appeared to be the lymphatic glands in the lungs, it shews the manner in which they are affected, when attacked by this disease.

The tumours in the mediastinum were the largest, and adhered closely to the surrounding cellular substance which was diseased; but those in the lungs were more detached, and much smaller in size.

CASE XIX.

CASE OF CANCER IN THE BREAST WHERE THE PARTS WERE ATTACKED BY COMMON INFLAMMATION, WHICH AFTERWARDS SUBSIDED.

A WOMAN, between 40 and 50 years of age, who had a tumour in the breast, which had increased to a considerable size, and had the appearance of being cancerous, came to London for the purpose of having the operation performed. Upon her arrival, the breast was more swelled and inflamed than it had been previous to her setting out; and it was hoped that this would subside; but on the contrary, it continued to increase, so as to lead Mr. Hunter, whose patient she was, to the belief that the cancerous disease was making a rapid progress, and that therefore

no time was to be lost in having recourse to the operation. It was accordingly performed without further delay. In dissecting the tumour from the pectoral muscle, it was found to adhere to it, and the muscle itself in a diseased state ; from which circumstance Mr. Hunter despaired of the success of the operation, since he could not remove all the affected parts. The operation was completed as quickly as possible, and the wound dressed. The patient was extremely ill, with faintings and vomitings for two days. She gradually recovered from this state, and the wound healed very kindly ; I saw her several years afterwards, and she had no return of the disease. The tumour, when examined, had the hard compact texture usually met with in scirrhus tumours.

This case, which is certainly a very uncommon one, and which I had an opportunity of paying particular attention to, led me to propose an operation in the case of a lady who came to town for advice respecting

a tumour in the breast, in which the symptoms had been so much increased by the journey, as to make the chances of success very doubtful, if the increase really belonged to the original disease. Two other surgeons were consulted; and it was proposed to have a meeting, which made a delay of two days; in that period, the extension of the swelling and inflammation had become such as to preclude the possibility of any operation being of service; and in the course of a fortnight she died.

In this last case, I should be led to believe that the disease which destroyed the patient was not cancerous, but an inflammation, attacking parts already diseased, and extending itself in the cellular membrane, like erysipelas. The progress was more rapid than in cancer, and the symptoms were not such as are met with in that disease.

CASE XX.

OF CANCER IN THE BREAST, ATTENDED WITH
UNUSUAL SYMPTOMS.

A VERY healthy lady, about 36 years of age, who was married, and had one child, complained of a lump in the left breast, next to the sternum, which was of the size of an egg. On account of this Mr. Hunter was consulted. He found it perfectly moveable in the surrounding parts. No thickness could be found leading to the sternum, nor to the armpit; nor any swelling in the glands of the armpit. He therefore advised that it should be extirpated, which was done.

In the time of the healing of the sore (which went on without interruption to the end), she was attacked with a pain on that

side of the neck, extending as high as the head behind the ear, which she supposed to be rheumatism. The pain came lower and lower, first to the shoulder, then to the upper part of the arm in two points, one anterior about the insertion of the pectoral muscle, and the other directly behind, where the latissimus dorsi joins the arm: these two points became extremely painful, and the arm began to swell as low as the joint of the elbow, this swelling being not of the œdematous kind, but rather firm or brawny, so that the arm felt to herself stiff and tight. This was supposed to be owing to an obstruction to the absorption; but this Mr. Hunter suspected was not the case; because he imagined that the effects of obstruction to the absorption, simply, would have first produced an œdema, and then the swelling would have become firm, from the irritation in the part in consequence of the œdema. Two small pimples formed on the skin on that part of the breast which had not been

removed, about two inches from the sore. One of these became a sore, with a hard basis, which had no disposition to heal, yet had no foul appearance: the other also acquired a hard basis, but did not break out into a sore. At the same time, under the edge of the old skin, but close to the cicatrix, another small pimple formed.

As it was uncertain what changes these small tumours would undergo, it was thought advisable to remove them by caustic, some with the lapis scepticus, the others with the lunar caustic. The sloughs came out, and the sores took on readily a healing disposition.

Mr. Pott was consulted concerning the state of the arm, and he was of opinion that nothing was to be done; that the whole was cancerous; that he had seen several such arms, as also similar tumours, but never knew any patient recover from either.

An erysipelatous inflammation took place all round the sore, attended with considerable

fever. This inflammation spread towards the painful shoulder, into the armpit, down the side, then down the arm and fore-arm. In the armpit, and all along the lower edge of the pectoral muscle, the inflammation went into the cellular membrane, producing considerable swelling there, but of the true inflammatory kind, which at last suppurated and broke. The erysipelatous inflammation left the other parts, the sores from the caustics healed fast, the abcess in the armpit healed very soon, and the surrounding hardness which had arisen from the inflammation in a great measure subsided.

It was hoped that this inflammation might give a turn to the swelling and pain in the arm; and that, upon the subsiding of the inflammation, the swelling in the arm might also subside, but it did not. The patient took opium occasionally to relieve the pain. She then tried warm baths, and received ease the second or third time; but still the swelling in the arm remained. The baths were

continued for a considerable time, but still the arm was swelled. While she was under this treatment, there were other small tumours appearing in the skin upon the pectoral muscle. She went into the country; the local cancerous symptoms increased, and she died.

CASE XXI.

OF CANCER IN THE BREAST, IN WHICH THE VIOLENT PAIN EXPERIENCED DID NOT ARISE FROM THE PROGRESS OF THE DISEASE, BUT FROM THE ACCIDENTAL PRESSURE OF THE TUMOUR ON THE BRANCH OF A NERVE.

A LADY, between 50 and 60 years of age, had a tumour in the breast, which was considered to be of a cancerous nature; and as the disease was not found to extend itself into

the axilla, although one gland was enlarged in that direction, the whole of the disease was believed to be within the reach of extirpation; and the operation was performed by Mr. Hunter. The parts healed very kindly, and there was a very fair prospect of the patient doing well; but, unfortunately, at the end of a year and a half, a gland in the armpit began to enlarge, and the pain attending its increase was more severe than any thing she had before felt, even the operation itself. It was not to be allayed by opium, and nothing could be more miserable than her existence. Under these circumstances I was consulted, and only one question was pressed upon me, whether this tumour was within the reach of being removed, without endangering her life. I had no difficulty in answering this question in the affirmative. The operation was accordingly performed. While dissecting out the tumour, a branch of a nerve was found lying before it, so much upon the stretch

that it became necessary to divide it, with a view to disengage the gland, and the patient immediately exclaimed, "You have done it; the pain is gone; cutting that chord has entirely relieved me." This dreadful pain never returned; but the disease had contaminated the parts beyond, and she fell a sacrifice to it in the course of two or three years.

Previous to the operation, this intense pain was supposed to be entirely a symptom of the complaint. A similar mistake is made in many cases of this and of other diseases, of which the following is a remarkable instance.

A CASE OF EXTENDED NERVE, MISTAKEN FOR
AN INFLAMMATION IN THE KNEE.

A GENTLEMAN, about 44 years of age, of a scrofulous habit, had an abscess formed on the spine of the os ilium, of the right side. When

it broke, the bone was found exposed, and two or three exfoliations were separated; a sinus also ran down in the course of the Sartorius muscle; and a small abscess formed in the anterior part of the thigh, about four inches below the groin. This was, however, deep seated, and of so indolent a nature as to produce no uneasiness. It approached slowly to the skin, so that a fluctuation could be felt. While it was in this state, the patient was seized with such violent pain all round the knee joint, that he was deprived of rest; and two people sat up with him at night, fomenting the knee with opiate applications, and large quantities of opium were given internally. The abscess had come sufficiently forward to admit of its being opened; this was done with the point of a lancet, introduced to some depth. The patient instantly declared that I had divided it, and the pain was entirely gone: and never after returned. It was proved, by an examination of similar parts in the dead body, that the

nerve which runs down from the anterior superior spinal process of the os ilium along the edge of the Sartorius muscle, and terminates in a great many small branches, which are lost on the outside of the knee joint, had been pressed upon by the abscess, and occasioned all the distress the patient suffered. The point of the lancet had fortunately divided the nerve, and enabled us to understand the nature of the attack.

CASE XXII.

OF CANCER IN THE BREAST, IN WHICH THE
WHOLE TUMOUR MORTIFIED IN CONSEQUENCE OF FEVER.

A LADY had for some time been afflicted with a cancer in her breast. The whole breast was involved in this disease. It was become considerably swelled, and very firm in texture. Besides the swelling of the breast, there was a fungous tumour, about the size of a large egg, situated between the breast and axilla, in the course of the absorbents; and the glands of the axilla were tumified. Both the breast and this tumour were ulcerated, discharging a large quantity of thin matter, and often bled, so as to be alarming. In one of these bleedings

Mr. Hunter was sent for, and applied lint dipped in oil of turpentine, which stopped the bleeding for some time. It gave her great pain for the whole day, through the substance of the breast, as also in the axilla, and down the inside of the arm; but the pain went off, and afterwards a little blood only oozed out, to stop which Mr. Ruspini's styptic was got, and applied. Her state of health was very much impaired, and she was expected to lie-in every day. Under these circumstances she was brought to bed, became extremely low, the pulse sunk, and it was hoped, by those who were interested about her, that she might die. When she was in this low state, the breast, and the tumour near the axilla began to mortify; and the whole surface, from the axilla nearly to the sternum, appeared like an eschar, the depth of which was not then known. Her health was still bad, but it was on the whole rather getting better. A separation took place round the edges of the dead part, and in a

few days the whole dead part, consisting of the breast and tumour, came out, leaving the pectoral muscle quite bare. Her health began to mend, although slowly. Bark, porter, (which she became fond of,) wine, with nourishing food was given, and a hope remained that she might recover of her general indisposition. The edges of the sore put on a very suspicious appearance; they became thick and ragged, and rather turning out, attended with extreme tenderness. How far the glands of the armpit had been contaminated, though they did not mortify with the breast and tumour, was not known. While there were appearances of a possibility of a recovery of her general health, the remaining contaminated parts became an object of consideration; but, as it was impossible to ascertain the extent of the disease, and as she was too weak either to bear an operation, or any irritating applications, it was resolved to wait till her strength should recover; but the signs of recovery were not

of long standing. Her strength began to fall off, her appetite failed her, the sore became stationary, looked pale, and there was hardly any discharge; nor were any granulations formed. Different parts of the body began to mortify: wherever there was a scratch, or pimple, it ran into a kind of mortification, and soon after she died.

In this case the fever produced the same effect as the preparations of arsenic, used for the extirpation of cancerous breasts; but, unfortunately, did not remove all the contaminated parts, only those which were in a diseased state, and whose vital powers were so much weakened by the action of disease as to make them more readily mortify than the other parts. It is upon this principle that the arsenic acts, and this case illustrates very clearly in what way also it too often fails of entirely removing the disease.

CASE XXIII.

OF CANCER IN THE BREAST, IN WHICH THE OPERATION, NOT HAVING ENTIRELY EXTIRPATED THE DISEASE, INCREASED THE RAPIDITY OF ITS PROGRESS.

A LADY had a tumour in the breast, near to the nipple, of a small size and flattened shape, hard in its substance, moveable upon the pectoral muscle, and producing a slight degree of pain. Its progress had been slow; in the course of two years it had not increased beyond the dimensions of an inch in breadth, two inches in length, and half an inch in thickness. It gave her mind a great deal of uneasiness, and she came to me for the purpose of having it removed. From the history of the case, and the appearance

of the patient's countenance, which was very delicate, I was inclined to believe the tumour of a scrofulous nature, but did not feel sufficient confidence in my opinion to dissuade her from the resolution she had taken, believing it the wiser plan, in so dreadful a disease, to leave nothing to chance; although, at that time, my notions respecting the complaint were not so clear and distinct as they now are. The operation was performed, and all the skin connected with the tumour entirely removed. When the tumour was cut into, to examine its structure, there was no hardness in any one part of it; nor had it the appearance usually met with in tumours that have contaminated the neighbouring parts with the cancerous poison. The patient got quite well in three weeks, and I had no doubt of her continuing so. In less than three months she consulted me again; and, to my great surprise and chagrin, both edges of the cicatrix were studded with the small cancerous tumours in the skin, already

described; and the disease now rendered active made a very rapid progress, and extended itself to the neighbouring parts.

CASE XXIV.

OF CANCER IN THE BREAST, IN WHICH THE SYMPTOMS WOULD PROBABLY HAVE BEEN ACCELERATED BY AN OPERATION.

ANOTHER lady, of a delicate habit, aged 37, who had several children, and while nursing had milk abscesses in each breast, found a small tumour in her left breast, very similar in its appearance, situation, and progress, to that mentioned in the preceeding case. At first I did not believe it to be of a cancerous nature or tendency; for, although the glands in the axilla were enlarged, those of the opposite side also exceeded their natural size; and the nature of her constitution made her

liable to have her lymphatic glands beyond the usual size. I made use of mild applications, as spiritus Mindereri and soap cerate. The tumour, however, continued gradually to increase, although very slowly; but, in a year's time, it was evidently larger; in the second year, rather more increased, and firmer in texture, approaching nearer to the skin, which became smooth and shining. In the third year, the glands in the axilla were so large as to be uneasy, and give pain. The tumour also was at times very painful, the pain of the darting kind: and a small tumour appeared in the skin, about an inch from the original disease. In the fourth year, the symptoms were more advanced; the thin skin over the original tumour was occasionally rubbed off, but readily healed; the returns of pain were more frequent and more violent; a second tumour appeared in the skin, about two inches distance from the other; and the first became larger. In this stage of the disease the patient was attacked

with a severe cold, that brought on an inflammation upon her lungs, to which, for many years, they had been subject ; and while the sufferings from the oppression in her breathing were violent, she never even noticed the disease in her breast. From this it is to be presumed that the pain she experienced had been more from the state of her mind and apprehension, than absolute sensation in the parts themselves ; and she died, after an illness of about four months, without the smallest increase of the symptoms arising from the cancerous complaint.

The great similarity in the symptoms, progress, and local appearances of these two cases, brings us as near as possible to a proof that the first case had its progress rapidly increased by the operation.

CASE XXV.

OF CANCER IN THE BREAST, IN WHICH THE SYMPTOMS WERE ACCELERATED BY THE OPERATION NOT HAVING ERADICATED THE DISEASE.

A woman, about 56 years of age, had a large tumour in the breast, which had been making so rapid a progress in the last three months, as to create alarm, and make her apply for assistance. She became my patient at St. George's hospital. The glands in the axilla were not affected, the skin was not apparently diseased, and the tumour was moveable on the pectoral muscle. Under these circumstances an operation was recommended. In performing it, I removed the skin to some extent, with a view to

extirpate every part which might have been contaminated. Every thing went on well, and the wound was nearly cicatrized, when there appeared three of the small tumours in the skin, on the edge of the cicatrix. The moment I saw them, I explained to the patient their nature, and proposed immediately to remove them, as the only chance of her deriving any benefit from the severe operation she had so lately undergone; and, upon her refusing to have them taken out, I explained to her that the offer I then made for her relief would be out of my power in a few days; and that if she should then consent to it, I must be obliged to decline it. In about five days there were above twenty of these tumours, and the disease increased so rapidly, that she fell a sacrifice to it in less than a month's time.

From this statement there can be no doubt of her death having been considerably hastened by the operation.

CHAPTER IV.

CASES OF HYDATID IN THE BREAST, THE SYMPTOMS OF WHICH EXACTLY RESEMBLED THOSE OF TUMOURS THAT BECOME CANCEROUS.

CASE XXVI.

OF HYDATID IN THE BREAST, OF A VERY SMALL SIZE.

A LADY, 20 years of age, in getting upon her horse, accidentally struck her breast on the projecting part of the saddle. The effect of the accident was severe pain, which continued for 24 hours, to so great a degree as to make her lie upon the sofa, to relieve

the pain. In a fortnight it subsided; but, from that time she had occasional uneasiness in it, and was frequently led to put her hand upon that part: no tumour, however, could be felt by so superficial an examination. In three years, the uneasiness increased, and more frequently returned. A small tumour was then felt under the finger, of the size of a small pea. The pain now became more constant, and there being an evident cause for it, she naturally took alarm, and made use of several means to relieve the pain. These proving ineffectual, and the tumour increasing in size, she came to London at the end of the fourth year, for the purpose of having it removed, and consulted me upon that subject. At this time, below the nipple, about the distance of an inch, there was a small hard moveable tumour, not larger than a full-sized glass bead, and no other disease whatever, which could be discovered.

I advised her by all means to hold her resolution, as I could give her no security

against a serious complaint by any other mode of treatment: it was therefore determined that the tumour should be extirpated.

In performing the operation, the tumour seemed to be so moveable, that it was difficult to fix it so as to determine the situation of the external incision. After dividing the external skin, the tumour, with a part of the gland of the breast, was removed; and, on examining it, the outer surface was polished, and loosely connected with the surrounding parts. Its colour was a dark purple; its size that of a small grape. On opening it, the contents were a bloody serum; the coat, a thin membrane, imbedded in the gland of the breast. The surrounding gland was unusually compact, but in no respect appeared diseased; so that the tumour was nothing more than a small hydatid, situated in the gland of the breast, near its external surface, formed in consequence of the blow upon the projecting part of the saddle. It

is probable that some blood was originally effused, and coagulated there; and when this was absorbed, the surrounding substance of the gland being too compact to collapse and fill up the space, a watery fluid was deposited. This is exactly similar to what happens in similar injuries upon the brain.

It is deserving of notice, that this tumour in the gland of the breast, completely fixed in its situation, had, to the feel, a power of moving in almost every direction; a deception no otherwise to be accounted for, than by the motion of the gland itself under the skin.

CASE XXVII.

OF HYDATID IN THE BREAST, IN A MORE
ENLARGED STATE.

A LADY, 52 years of age, accidentally putting her hand upon her left breast, felt a tumour on the upper part of it, about two inches above the nipple. The tumour was the size of a nut, and must have been a certain time arriving at that size; but, not having produced sensation, she was not sooner led to the discovery. It gave no pain after it was discovered; she therefore took no further notice of it; but, in the course of three months, its size appearing to increase, she took the alarm, and consulted her medical attendant respecting it. Leeches were applied once in three weeks, and other means

used; but these did not reduce the size of the tumour, although the uneasiness occasionally felt in it was in a degree diminished by their use. Under these circumstances I was consulted. The tumour appeared to me to be fixed in the gland of the breast, and gave me a great degree of alarm, respecting the consequences of its increase. I wished the external use of hemlock to be tried; but, in a month, that not having produced any beneficial effect, I stated to the patient that I felt myself unequal to the resolution of the tumour, and therefore wished for a consultation, to see how far any other surgeon could propose a more effectual mode of dispersing it. Mr. Cline was consulted: he saw the disease in the same view, and agreed with me in opinion, that an operation, in the present stage of the complaint, would leave no probability of a recurrence of the disease. Under these circumstances, the operation was resolved upon.

The tumour was extirpated, with some of the surrounding fat, and a portion of the gland of the breast, with which it was connected. Upon examining the part, after its removal, both Mr. Cline and myself were much astonished to find, that it was a cyst, containing a clear fluid; the membrane composing the bag not thicker than the finest cambric. The surrounding gland was not in a diseased state, but unusually compact, from having been compressed by this hydatid.

These two cases of simple hydatid in the breast, unconnected with any other diseased alteration of structure, have led me to consider those hydatids which are sometimes met with in the breast, after that gland has taken on a cancerous disease; and I am led, from every consideration I can give the subject, to believe, that such hydatids are no part of the poisonous disease, but accidental complaints superadded to it; and, since such hydatids do occur in a natural and healthy state

of the gland, they are much more likely to do so when it is under the influence of another disease.

There are preparations in the Hunterian Museum, of small cysts of this kind, in great number, in a scirrhus breast; and there is one of the size of a pullet's egg, into which a portion of a fungous excrescence is seen to project; but the surface of the projecting tumour is quite smooth. It is therefore probable, that the tumour made progress in the direction in which there was the least resistance, but had nothing to do with the formation of the hydatid.

Until I was furnished with the facts that have been adduced, I believed such cysts to contain the cancerous secretion thrown out from the different parts of the tumour with which they were connected, and therefore that they were not only subsequent to the formation of the tumour, but an incontestable proof of its virulence, and of the advanced stage of the disease.

These observations are offered with great diffidence upon so intricate a subject, with a view to excite enquiry; and, as the evidence on which they are formed has been fairly stated, they cannot mislead future enquirers; they can only call their attention to this part of the investigation, which is the great object of the cases contained in this chapter.

CHAPTER V.

CASES OF CANCER IN THE TONGUE, ILLUSTRATING THE SYMPTOMS OF THE DISEASE.

CASE XXVIII.

OF CANCER IN THE TONGUE, WHICH TERMINATED FATALLY.

A GENTLEMAN, 36 years of age, had a small sore upon the edge of the tongue, which was supposed to be the effect of that part having been irritated by the tooth with which it came in contact. He applied to his dentist to take out the tooth, which was done; but no relief was obtained; he therefore wished another to be removed; but the dentist took the

alarm, that the sore was of a malignant nature, and wished a surgeon to be consulted on the propriety of the measure. The drawing the second tooth had no effect: the ulcer on the tongue increased in size, gradually; and, in the course of a few months, so much of that organ was destroyed by it that talking became painful, and his words hardly intelligible to his most intimate friends. Taking nourishment was attended with difficulty, and it became necessary to pass the aliment over the tongue, to enable him to swallow it. He lingered on in this melancholy state for six or seven months, and then died. During the last part of his illness he was obliged to commit to writing every thing he had to communicate.

As I did not attend the patient, I am unable to give a more accurate detail of the symptoms. The disease ran its course in ten or eleven months; and, in that time, the greater part of the tongue was destroyed.

CASE XXIX.

OF CANCER OF THE TONGUE, WITH AN ACCOUNT OF THE APPEARANCES OBSERVED AFTER DEATH.

AN officer, between 50 and 60 years of age, had a small foul ulcer on the side of the tongue, which did not heal under any mode of treatment; and the surgeons who were consulted formed very different opinions respecting its nature. Mr. Hunter declared it to be cancer, and grounded his opinion upon a gland, situated behind the angle of the lower jaw, in the course of absorption, having been contaminated, and taken on the disease. This opinion, at the time, was not assented to, and encouragement was held out to the friends of the patient, that he

would recover. The disease went on, making gradual and regular progress for a year or two, and then he died.

The following is a state of the morbid appearances which presented on dissection.

Immediately under the coronal process of the lower jaw, on the right side of the neck, was situated a hard and conspicuous tumour, which, on examination, proved to be an enlarged gland. It had been tender to the touch, and, in general, troublesome and painful. This gland weighed about two ounces and a half; measured an inch and half in thickness, and a trifle more in its diameter.

The lymphatic glands, in general, of the neck (and particularly the thyroid gland) were diseased. The tongue and pharynx appeared to be the chief seat of the disease. Every natural vestige was obliterated, except a small remnant of the tonsils, which were in an extremely scirrhus state. Every muscle belonging to the tongue was anni-

hilated, and formed an entire scirrhus mass. The back part of the tongue had been consumed in great part by erosion, which had formed a contraction that altered its whole natural appearance, and left it of an irregular triangular form, of a watery aspect, having by no means a remote resemblance to a turtle's heart.

CHAPTER VI.

CASES WHICH ILLUSTRATE THE SYMPTOMS OF
CANCER IN THE TESTICLE.

CASE XXX.

OF CANCER IN THE TESTICLE.

A GENTLEMAN, between 50 and 60 years of age, received a hurt on the testicle, which immediately produced inflammation and swelling: these were reduced by the common methods. About a twelvemonth after, the testicle began to swell. He went through a slight mercurial course, but without benefit. Several other means were tried,

but equally without good effect. In about eighteen months, from the time of the accident, it inflamed, and suppurated. At this time Mr. Hunter saw it. While in a state of suppuration, it was impossible to say what was the nature of the disease; Mr. Hunter therefore waited a few days to see what appearance the sore would put on. It soon shewed itself to be a true cancer. The edges of the scrotum turned out from the testicle like the opening of the bud of a flower, leaving the testicle in the centre. The spermatic chord, for some way up, was thickened, and a tenderness along the chord extended into the belly, from which it was considered to be too far gone to admit of an operation; and in six months the patient died.

Upon examining the body after death, the testicles were wholly destroyed, as well as the spermatic chord of the left side, up to the pubes; and, on the right side, there was a small tumour, projecting from the os pubis, which, most probably, was the diseased

termination of the spermatic chord on that side.

The lymphatic glands upon the os pubis, and towards the groin, were contaminated, forming two rather large tumours on the sides of the pubes.

On examining the progress of the disease, within the cavity of the abdomen, the lymphatic glands, lying upon the inside of the ossa pubis, and the chain running along the edge of the psoas muscle, between it and the spine, on both sides of the body, were diseased, those nearest the pubes having matter in them, while those higher up along the spine had not arrived at supuration.

On the right side of the spine, the glands were affected as high as the receptaculum chyli : none in these higher parts were considerably enlarged, but on the left side there was a large tumour, just below the pancreas, to which the epiploon and duodenum adhered, which was evidently an enlarged

lymphatic gland of the back, projecting forwards.

On cutting into these glands, those which had not arrived at suppuration contained a soft substance, not unlike soft cream-cheese: those further advanced appeared to be only a bag, containing a whitish matter, tinged with blood; and some nearer the pubes consisted of a white thin matter, like cream, with no tinge of red whatever.

CASE XXXI.

OF CANCER IN THE TESTICLE, IN WHICH THE
CONTAMINATED SKIN OF THE SCROTUM
BECAME A FUNGATED SORE.

A CHAIRMAN had a swelled testicle, which increased to a considerable size, not attended with much pain, as the spermatic chord remained of its natural texture. It was suspected to be scrofulous. The skin became affected, and adhered to the body of the testicle, particularly on the fore part.

It was extirpated, with a good deal of the attached skin, but not the whole of it. The wound healed very readily, and remained sound for about two months: it then broke out, and began to throw out a fungus from the edges of the old skin, all round the

cicatrix. This fungus went on increasing till it was larger than an orange ; the more external part of which dried and crumbled off, which often produced a profuse hæmorrhage at the time. The man's health became impaired ; and he lost, in some degree, his senses. In this state, arsenic was tried in powder, mixed with three parts of flour, made into troches : these were inserted into its substance in several places, but did not appear to have much power in lessening the tumour ; and he died.

On examining the parts, after death, it was found that this fungus had arisen from the edges of the cicatrix, or old skin ; and not from either the surface of the sore, or the end of the spermatic chord ; both of which, however, had ulcerated, so as to be in the state of a common sore, but did not shoot out any of this fungus.

CASE XXXII.

OF CANCER IN THE TESTICLE, WHERE THE CONTAMINATION WAS CARRIED ON FROM THE SCROTUM, AND NOT FROM THE SPERMATIC CHORD.

A GENTLEMAN had one of his testicles every now and then swelled, and again it almost wholly subsided; but, at last, the swelling became permanent, and extended some way along the chord: this, like that in the body of the testicle, at first, sometimes subsided, but afterwards also became permanent. When it was in this state it inflamed, and the skin adhered to the body of the testicle. When this inflammation subsided, the testicle was removed, and, along with it, all the scrotum that appeared diseased, and

the spermatic chord, as high as the rings of the abdominal muscles. The wound healed as fast as a sore of equal size in any other part of the body. About nine months after the operation, he observed a swelling under the upper end of the cicatrix, and came to town ; and, being examined by Mr. Pott and Mr. Hunter, the swelling plainly appeared to be the glands of the groin.

This swelling increased, and others formed, more in the groin. The one under the cicatrix raised it up. They all became connected, so as to form one lump. At last, a kind of pulpy fluctuation was felt in this tumour: it ulcerated, and threw out a fungus, which often bled, and the discharge was very offensive. The surrounding parts, in the lower part of the abdomen, became affected, and he died.

The singularity in this case was the circumstance of the lymphatic glands of the groin becoming contaminated ; for in cancer in general, or in diseases contaminating by

absorption, the disease breaks out in the cicatrix, and the consequent sores in the line of absorption. Here it did not break out in either, for the cicatrix did not give way, nor the spermatic chord. To account for the glands of the groin becoming contaminated, and going on with the consequent disease, we must suppose that the absorbents from the diseased scrotum had carried the poisonous matter through those glands.

From this case, it would appear that we should extract the testicle before it contaminates the scrotum. Our caution hitherto has only been with regard to the spermatic chord.

CASE XXXIII.

OF CANCER OF THE TUNICA VAGINALIS TESTIS.

IN December 1781, a gentleman felt an uneasy sensation in the scrotum. On examining it, he perceived the left testicle swelled, with a small degree of hardness to the touch. He immediately applied to a surgeon, who told him that the disease was a hydrocele, or dropsy of the testicle, and advised him to let it alone till it became large, when it would be necessary to perform an operation, which would effectually cure him.

From that time to the beginning of March 1782, the swelling gradually increased, the pain became acute, and the hardness increased. About this period, two

other medical gentlemen saw him : they were of opinion that the disease was complicated, and by no means a simple hydrocele; therefore desired him to do nothing for a fortnight or three weeks, and then they would see him again. In the mean time he was advised, by some friends, to apply to a surgeon of their recommendation, who was noted for curing this complaint. He was led to believe that this surgeon would cure him at once, and with very little pain ; he therefore naturally consulted him, and allowed two or three punctures to be made, in the usual manner, for the palliative cure of the hydrocele, the surgeon assuring him that the disease was of that nature.

On finding a failure of the good effects which had been promised, he again applied to his former surgeon, with the inflammation, pain, and swelling much increased; indeed so much so, as to confine him to his room. The rapid increase of the symptoms he attributed to the efforts made to relieve

him. At this time Mr. Hunter was called in, and it was thought advisable to open into the tumour to ascertain the real nature of the disease, and then to proceed accordingly. This was done; and, on examining the substance of the tumour, it appeared to be composed of a thick coat, within which was a grumous and gelatinous substance. From this appearance of the tumour, it was thought advisable to remove the whole, which was immediately done. The tumour had communicated its diseased disposition to the skin, for it was adhering to it all round the fore part. Some of this skin was therefore removed with the tumour.

On examining the tumour, after its removal, it was found to consist of a thickened tunica vaginalis, filled with a firm coagulum of blood, which, in some parts, had lost its red particles; the whole appearing like a mottled swelling; and the testicle entire in the posterior part, only appearing to be squeezed into a smaller size than natural,

from the pressure of this substance in the tunica vaginalis.

The immediate result of this operation was, that the parts healed up readily; but, some months after, a swelling on the lower and left side of the abdomen was observed, which seemed almost to fill the left side. He was sent to the sea, but it appeared to be of no service to him. The swelling increased, and he became weak, hectic, and died.

On examining the body, there were found large masses of swellings, which were not much firmer than strong coagulated milk, with the whey in it. These masses extended up the left side, along the back, as high as the diaphragm. The epiploon appeared to have a large mass in it, connecting the colon, stomach, and other viscera, together.

The liver was studded full of small tumours, about the size of a bean, of the same structure; and the spermatic chord, out of the belly, was become thickened in the same way.

CHAPTER VII.

CASES WHICH ILLUSTRATE THE SYMPTOMS OF
CANCER IN THE RECTUM.

CASE XXXIV.

OF CANCER IN THE RECTUM.

A GENTLEMAN, 70 years of age, had an attack of a bowel complaint, which teased him very much. When it appeared to be gone, he occasionally passed a little blood while at stool, and had an uneasiness after walking, or any other fatigue. Upon recollecting every circumstance respecting himself, he mentioned, that fifteen years before

he had an attack of dysentery, while residing in a warm climate; and, ever since that period, had, at times, an uneasiness in the lower bowels.

He consulted a surgeon, who examined the rectum, by passing up his finger, and stated the complaint to be excrescences from the internal membrane; that he felt one large one, and another smaller. This induced the patient to come to London, and put himself under Dr. Baillie's and my care. Upon examining the parts, a cavity was distinctly to be felt, about two inches and half within the gut; the upper and lower margin of which was prominent, thickened and hard. The surface of the cavity did not feel to the finger like that of an ulcer, but had a soft pulpy feel. The principal symptoms were a discharge of a thin fluid, great pain after using exercise or going to stool. These symptoms gradually increased; going to stool became difficult, as the cavity increased in size, by the margin becoming thicker;

and, as the gut was a little bent, from adhering to the sacrum, the angle was in the middle of the cavity, and therefore, although the finger could be passed up when the parts collapsed, nothing could pass down, till the bowel was loaded and distended above, and then the contents forced their way by little and little, giving excruciating pain, but never emptying the bowels above. In this way they became very capacious, and loaded with air; and in a year, from the time I first saw him, he died, having received no benefit, either from medical or surgical advice. Nothing but opiate clysters, and the use of opium had given relief; and, at last, he could not bear the pipe to be introduced. During the last two months, there was a small fistulous orifice at the verge of the anus, through which air and liquid fæces passed, and which appeared to give some ease. His death was occasioned by the over distension of the bowels with air, and accumulated fæces, above the diseased part, making the different

portions of the bowels form such acute angles with one another, as to produce, at these parts, a complete obstruction to their contents.

On inspecting the body, the following appearances were observed.

The muscles of the abdomen were very much stretched by the great distension of the intestinal canal. On opening into the cavity of the abdomen, the colon, jejunum and ilium, were much enlarged, but the duodenum empty and collapsed. The sigmoide flexure of the colon had become twisted upon itself, so as to prevent its contents passing down into the rectum. This, however, had recently taken place, as the lower part was equally enlarged with the colon.

The lower part of the rectum was very much thickened in its coats, which had become hard and scirrhus, adhering to the lower part of the sacrum, for the extent of two inches in length, and one inch from the external orifice of the anus.

The internal membrane of this portion was in a state of ulceration, with a fungous granulated appearance, soft to the touch, but irregular; some portions hollow, as in ulcers, others prominent. The canal through the diseased part allowed the finger to pass through it without difficulty.

There was no appearance of inflammation on the peritoneal coat of the intestines, or of water in the general cavity. The coats of the bowels were increased in thickness beyond what is natural, and were more vascular than in a healthy state.

The small fistulous orifice at the verge of the anus, communicated with the inferior portion of the diseased part by a large internal orifice. The fistula was half an inch in length.

CASE XXXV.

OF CANCER IN THE RECTUM, EXTENDING
ITSELF TO THE URINARY BLADDER.

A GENTLEMAN, 50 years of age, laboured under a disease in the rectum, which was beyond the reach of the finger; and this prevented its being ascertained by examination. His symptoms were, in many respects, similar to those detailed in the last mentioned case, and in the course of two years he fell a sacrifice to it.

Some short time before his death the penis became enlarged, and was constantly in a half-erected state; and the last two or three days, he could not make water, without the introduction of a catheter, and some of the excrement passed by the penis.

The following appearances were observed on dissection.

The fundament, at the verge, and nearly two inches higher, was in a natural state; but, at this part, there was a thickened ridge, and a large ulcerated cavity, bounded above by a similar ridge. The cavity was about four inches in diameter. On the side next the sacrum, the parts were all thickened, and in a diseased state, adhering to the bone, which was itself affected, and so soft as to be cut with a knife; so that the posterior parietes of this sac were about two inches thick. The internal surface was very irregular, having a fungous appearance. On its anterior surface there was a small hole, just large enough to admit a common-sized bougie, communicating with the bladder, which had at this part fungous excrescences covering the orifice, and extending to some distance. The bladder was distended with air from the rectum, by means of this opening, but, in every other respect, was in a

healthy state. The internal orifice of the bladder was in a natural state, but the membranous part of the urethra, and part of the corpora cavernosa, and corpus spongiosum penis were enlarged and diseased, having lost entirely their natural texture ; while the part within two inches of the glans, was perfectly natural. There was a small oblong cavity in the side of the corpus spongiosum, communicating with the urethra, apparently a similar ulceration to that in the rectum; and the thickening of the penis was not dissimilar to that behind the gut. At first it was difficult to account for these appearances, similar in their nature, the effects of the same disease, and so near one another, without any immediate connexion, or being in the line of absorption ; for the disease in the rectum was certainly the original, and that of the penis, if a consequent one, could not be the effect of absorption. It became, however, very easy to explain this, when it was understood that the vesiculæ seminales were involved

in the disease, and had communicated the poison directly to the caput galinaginis in the urethra.

The contents of the abdomen were in a natural state.

The appearances, in these two cases, have the true character of cancerous ulcers, the thickened prominent brim, which is also found in similar ulcers, both at the pylorus and in the intestines. In all the cases of cancer in the bowels, that have come under my observation, I have not met with any consequent disease from absorption. I by no means mean to say, that such effects do not take place, but that they are of rare occurrence in the bowels, to what they are in other parts of the body.

At the time I attended these cases, I was unable to devise any mode of palliating the symptoms; but, in diseases of the rectum, which have since come under my care, the patients have experienced the greatest relief from a pill of extract of opium, of one, two,

or three grains, according to the urgency of the symptoms, introduced upon the end of a bougie into the rectum, and left there. This is applied without pain, and retained without difficulty, which, in such cases, cannot be said of an opiate clyster, the use of which is attended with so much distress, that patients are with reluctance persuaded to submit to it.

CHAPTER VIII.

CANCEROUS AFFECTION OF THE EXTREMITIES,
PRODUCING FUNGATED SORE.

CASE XXXVI.

OF FUNGATED SORE IN THE FORE-ARM.

A MAN, aged 64, received a kick from a horse, on his right fore-arm; a very considerable swelling immediately came on, which was principally composed of extravasated blood. It was bandaged, and what are commonly called discutient applications were used. Under this treatment it became much less; but a hardness was felt in the surrounding cellular membrane, immediately

under the skin, and it was thought advisable to let out the remaining extravasated blood, which was done. The hardness increased, so as to put on the appearance of a tumour, shooting out a fungus, which was loose, and appeared within the reach of being removed: this was done by operation, and the parts, for a fortnight, looked very well, but the fungus then began to arise from the surface of the sore, and continued to do so for eight or nine months; and he was threatened with symptoms of hectic fever.

When the sore was in this state, there was a consultation, in which it was advised that the arm should be amputated, as the absorbents and the glands in the armpit appeared to be sound. It was accordingly amputated above the elbow, that all the diseased parts might be with certainty removed. About a month after, a general swelling came upon the stump, and violent spasms in the arm, but the sore continued to heal, and, at last, got well.

CASE XXXVII.

OF FUNGATED SORE IN THE FOOT.

A LADY, aged 27, had a complaint on the ball of the great toe, which she conceived to be what is commonly called a bunion; and, from the idea that it was of no serious consequence, she neglected it, and walked, and danced, although in a good deal of pain: however, at last, it became so troublesome, as to demand attention. It began to spread, and throw out a fungus, which could not be kept under by art, and it was thought advisable to extirpate it: this was presently done, and it was now hoped all would heal up kindly; but it began again to throw out a fungus, which rose up above the general

surface of the foot, of a dark colour, and about the size of a crown piece.

When Mr. Hunter was called in to see her, the sore was in this state, and the foot and ankle were become inflamed, and shewed the disease was producing its influence on the neighbouring parts. Mr. Hunter enquired if there was any kernel in the ham or groin, which was not found to be the case. He was then of opinion that the leg should be amputated, just below the knee, which was done. The stump was very tedious in healing, owing, probably, to her weak state of health; but it never shewed any symptoms of a diseased disposition.

About three months after the amputation, and when the stump had completely healed, he was again consulted about her future management, and was then told that she had a swelling on the upper part of her thigh, near the groin, which she had observed about a week after the amputation, and which had since increased very considerably. He

examined it, and found a swelling of one of the lymphatic glands, about the size of a walnut, prominent under the skin, and a little painful when pressed. Just above this, and in the groin, there was a smaller one, which appeared likewise to be diseased. These glands, he made not the least doubt, were buboes, in consequence of absorption, from the disease of the foot, contaminated prior to the amputation ; and, from taking all circumstances together, he did not advise the extirpation of them. If they had been searched for, and removed, at an earlier period, perhaps at the time of the amputation, or soon after, as they were discovered about a week after the operation, it is probable that she might have recovered.

CHAPTER IX.

OBSERVATIONS ON THE NATURE AND PROGRESS
OF CANCER.

IN stating these observations, I wish it to be understood, that I am communicating all the material information I have been able to collect upon this important subject; and not meaning that it should all be considered as my own. Much, certainly, originated with Mr. Hunter; perhaps the greatest part; for I am conscious that we are too apt to consider those opinions that have long been known to us, and have been often revolved in our minds, as the creatures of our own brain, although, in fact, they are only adoptions, to which we have given some change of dress, and are led to.

believe, by doing so, we have made them entirely our own.

The general principles here stated, both with respect to the contamination of the disease, and the different effects of caustic applications, I certainly received from Mr. Hunter. The idea of common indolent tumours becoming cancerous, was not his, since a case of that kind, which occurred, of such tumours being met with in the breast, seemed to be new to him, and the diseased part was preserved as a specimen of that fact. So far, indeed, have I been from adopting such an idea, from any source whatever, that, within these three years, I gave it as my opinion that the case was not likely to happen, and continued to hold the same opinion till the two cases, mentioned in the beginning of this work, placed the subject of such cases of cancer in a new point of view, and induced me to put together the materials which are here produced.

As cancer is a term too indiscriminately

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applied to many local diseases, for which we have no remedy, though they differ very much among themselves, it becomes necessary to state what the complaints are, which I include under this denomination.

The present observations respecting cancer, apply only to those diseased appearances, which are capable of contaminating other parts, either by direct communication, or through the medium of the absorbents; and when they approach the skin, produce in it small tumours of their own nature, by a mode of contamination, with which we are, at present, unacquainted.

There is a disease by which parts of a glandular structure are very frequently attacked, particularly the *os tinæ*, the *alæ* of the nose, the lips, and the *glans penis*. This has been called cancer, but differs from the species of which we are now treating, in not contaminating the neighbouring parts, with which it is in contact; and neither affecting the absorbent glands, nor the skin,

at a distance from it. It is, properly speaking, an eating sore, which is uniformly progressive; whereas, in cancer, after the sore has made some progress, a ridge is formed upon the margin, and the ulceration no longer takes that direction. It also differs from cancer, in admitting of a cure, in many instances, and under different modes of treatment.

From the facts that have been stated, in the preceding cases, it appears, that cancer is a disease, which is local in its origin. In this respect, the cases here given only confirm an opinion, very generally received among medical practitioners, but in favour of which no series of facts had been laid before the public, of sufficient force entirely to establish the position.

This point I shall therefore assume as ascertained, and proceeding one step further, shall endeavour to establish a second point, which is, that cancer is not a disease which immediately takes place in a healthy part of

the body, but one for the production of which it is necessary that the part should have undergone some previous change, connected with disease.

In proof of this, I need only adduce the two first cases in the present volume, as they appear to me the most clearly made out, of any that I have seen; and having such grounds to set out with, this opinion becomes very materially strengthened by the innumerable instances, which occur in practice, of a pimple, small tumour, or wart upon the nose, cheek, or prepuce, remaining for ten, fifteen, twenty, or thirty years, without producing the smallest inconvenience; but, at the age of 60 or 70, upon being cut in shaving, bruised by any accidental violence, or otherwise injured, taking a cancerous disposition.

All the cases of induration of the gland of the breast, or of indolent tumours in it, which have continued for years, without producing any symptoms, and, after being

irritated by accidental violence, have assumed a new disposition, and become cancerous, admit of the same explanation; and may be considered as so many proofs of the truth of this latter position.

These two appear to be the only conclusions which can be drawn from the materials I have been able to collect. They are, at least, the only principles I shall now venture to bring forward; and, should they prove to be well founded, a material step will be gained, towards the further investigation of this morbid poison.

As cancer is generally considered as an hereditary disease, which, in the more usual acceptation of that term, is incompatible with the above positions, it becomes necessary to explain in what way the frequent occurrence of the complaint, in particular families, can be reconciled with what has been advanced.

When once it is admitted that a true cancer is a poison, formed in a part previously altered in its structure, and consequently that it is

entirely a local disease, as much so as a venereal chancre, there will be no difficulty in accounting for its being more common in persons whose constitutions are of one kind, than in those who differ from them; since there is a general principle in the animal œconomy, on which it can be explained. It may, however, under particular circumstances, be met with in different constitutions.

It is now universally admitted, that children take after their parents, in the general structure of their bodies, and therefore will be more or less liable to have the different solids, of which they are composed, disturbed by the same causes; and, when a violence of any kind is committed upon them, it may be productive of the same diseases.

To illustrate this by examples, it will happen, in some families, that the venereal infection shall always appear in form of gonorrhœa; in others again, rarely or ever in that form, but in that of chancre. Strictures in the urethra are common in some

families: they have taken place in a father, and all his sons, from very slight causes; such, indeed, as would not have produced the disease in others. Yet stricture cannot be called hereditary, because it is a local complaint, arising from a local inflammation, differing in different people, according to the natural irritability of the parts which are affected.

In this way, and this only, can cancer run in families, and be an hereditary disease. The breasts of the females of any one family may be more liable to have their natural actions disturbed by slight causes, than those of the females of other families; and this disposition may be increased at a particular period of life, when the gland is becoming less perfect in its functions. Under such circumstances, a slight cause may be sufficient to form a tumour; and, in its progress, the cancerous poison may be generated in it. When the poison has been formed, the progress of the complaint, as appears in the

cases, varies exceedingly in different patients. This must arise from peculiarities of constitution, more or less favourable for its action, which accounts for the infinite varieties in the appearances of the disease met with in practice.

The object of the present observations is only to promote the investigation of cancer, as a disease, in the knowledge of which a very small progress has hitherto been made; and till that knowledge shall be more advanced, nothing can be said respecting the mode of treatment to be recommended in confirmed cancer, unless some fortunate accident should be the means of our discovering a remedy. Till we arrive at a more perfect knowledge of the disease, or till such a discovery shall be made, it becomes of no small importance to ascertain in what way these tumours can be dispersed, which, if allowed to remain, too often become cancerous; or, when their dispersion cannot be effected, what is the best mode in which they

can be removed ; for I am induced to believe, from what has fallen under my observation, in the practice of Mr. Hunter, and afterwards in my own, that when the cancerous poison has acquired the power of contamination, the disease is generally too far advanced to be subdued by the extirpation of the tumour.

Many tumours in the breast have been dispersed by local applications ; and as it is possible, that had they continued, some violence committed upon them might have made them become cancerous, it is an object of the utmost importance, that every such tumour, as soon as it is observed, should have the most efficient means employed for its reduction. I wish, however, to observe, that the success met with in some of these cases is often productive of material mischief, by inducing the practitioner to be too sanguine, and to go on with the use of the same means in other cases, encouraged by his former success, till the disease has arrived at the state of a true cancer, and therefore

has advanced beyond that stage in which it might have been removed by the operation of extirpating the tumour.

The means which have been most efficient in reducing such tumours, are the application of leeches, at short intervals, the periods being varied according to circumstances. The external use of spirit of wine, camphor and Goulard's extract of lead, in different proportions ; mercurial ointment, of different degrees of strength, with or without camphor ; and poultices, in which hemlock is the principal ingredient. By one or other of these applications, many tumours in the breast have been dispersed, and the medical person, who directed the application, has acquired the reputation of having cured a cancer ; and I am led to believe, that he has indeed done the next thing to it ; that is, he has prevented a cancer from being formed at all.

Those tumours which arise in consequence of cold, yield most readily to the bleeding

by leeches. Those which are more indolent, and rather give the idea of being connected with a languid state of constitution, give way to hemlock, or mercury.

There is a swelling which sometimes takes place upon the margin of the mamma, midway between the nipple and the axilla, which appears to be independent of the gland of the breast, and only an affection of a lymphatic gland in that situation, which readily becomes enlarged, and often yields to an application composed of equal proportions of spirit of wine and camphorated spirit, with one eighth part of Goulard's extract of lead.

Having stated that many tumours in the breast admit of being dispersed by local applications, it would be an object of the utmost importance, if it could be determined, with precision, at what period the tumour is simply of the common kind, and when it has acquired a power of contamination. From the tumour being, in general, deep seated, and therefore not within the reach of accurate

examination, this question is involved in much obscurity. It is, however, one of so much consequence, that every light that can be thrown upon it should be attended to; that, in the end, we may be enabled to come as near as possible to an accurate decision.

The truly scirrhus tumour, which is known to be capable of forming the cancerous poison, when allowed to increase in size, has been so often described, that every surgeon must be enabled, from those accounts, to pronounce the tumour, when he meets with it, to be of that kind. In that stage of the disease, there can, therefore, be no difference of opinion respecting the nature of the complaint. It is known to be hard, heavy, connected with the gland of the breast; and, when moved, the whole gland moves along with it.

The structure of a scirrhus tumour in the breast, is different in the various stages of the disease; and a description of the appearances, exhibited in the three principal

ones, may give a tolerable idea of what the changes are which it goes through, previous to its breaking, and becoming what is termed an open cancer.

When a section is made of such a tumour, in an early stage, where the structure is seen to advantage, which is by no means always the case, it puts on the following appearance: the centre is more compact, harder to the feel, and has a more uniform texture than the rest of the tumour, and is nearly of the consistence of cartilage. This middle part does not exceed the size of a silver penny; and from this, in every direction, like rays, are seen ligamentous bands, of a white colour, and very narrow, looking, in the section, like so many extremely irregular lines, passing to the circumference of the tumour, which is blended with the substance of the surrounding gland. In the interstices, between these bands, the substance is different, and becomes less compact towards the outer edge. On a more minute examination,

transverse ligamentous bands, of a fainter appearance, form a kind of network in the meshes, of which the new-formed substance is inclosed. This structure accords with what Dr. Baillie describes to be the case in cancerous diseases of the stomach and uterus.

In a further advanced stage of the tumour, the whole of the diseased part has a more uniform structure; no central point can be distinguished; the external edge is more defined, and distinct from the surrounding gland; and the ligamentous bands, in different directions, are very apparent, but do not follow any course that can be traced.

When the tumour has advanced to what may be called cancerous suppuration, which, however, does not always happen in the centre, before it has approached the skin, and formed an external sore; it then exhibits an appearance totally different from what has been described. In the centre is a small irregular cavity, filled with a bloody

fluid, the edges of which are ulcerated, jagged, and spongy. Beyond these, there is a radiated appearance of ligamentous bands, diverging towards the circumference; but the tumour, near the circumference, is more compact, and is made up of distinct portions, each of which has a centre, surrounded by ligamentous bands, in concentric circles.

In some instances, the scirrhus has no appearance of suppuration, or ulceration, in the centre, but consists of a cyst, filled with a transparent fluid, and a fungous excrescence, projecting into this cavity, the lining of which is smooth and polished. Where a large hydatid, of this kind, occurs, a number of very small ones have been found, in different parts of the same tumour; and, in other cases, there are many very small ones, the size of pins' heads, without a large one.

My opinion respecting these hydatids has been already stated*; they are, certainly,

* Vide page 108.

by no means sufficiently frequent in their occurrence to admit of their forming any part of the character of a cancerous tumour.

This description of these three stages of scirrhus is taken from preparations in the Hunterian Museum, selected for the purpose: from these a great many drawings have been made, which, I hope, upon a future occasion, to lay before the public.

Having so fully described the scirrhus tumour, which is generally known, it is necessary to mention such other tumours as are capable of taking on the disposition to form cancer. Of these there are two kinds; one of them has already been noticed in the preceding cases: it is hard, compact, and perfectly circumscribed, inclosed in an investing membrane, slightly connected with the surrounding gland, and very readily detached from it. In its internal structure, it has somewhat of a radiated appearance, as, indeed, most tumours have, which are originally small, and increase

in every direction ; but its substance is uniformly compact, in every part of it. The other kind is of more rare occurrence : it is not mentioned in the cases, as I have only met with one instance of it ; and, as there was no circumstance deserving of attention, but the peculiarity in the structure of the tumour, which may be better explained in this place.

The tumour was situated between the nipple and axilla, and did not seem to be in the substance of the glandular structure of the breast : it appeared to be moveable, independent of the breast, was soft, and as if made up of different parts. It was considered as an enlargement of a lymphatic gland, or glands, in that situation, and was therefore thought likely to be resolved by external applications. Trials of different kinds were made, but were found worse than ineffectual ; as the size of the tumour was evidently increased, particularly under those in which mercury and camphor were the

principal ingredients. It was therefore thought prudent, whatever the nature of the tumour might be, to extirpate it, more particularly as the patient was only eighteen, and was losing her health under the different modes of treatment which had been adopted.

The tumour was extirpated, taking care that the whole was removed; and, upon examination afterwards, it was found to be completely circumscribed, and surrounded by a strong covering, so as to be entirely unconnected with the gland of the breast, and, probably, in its origin, was one of the lymphatic glands. A section was immediately made of it, for the purpose of examining its internal structure, which was found nearly to resemble that of the tumour in the foot, described in the second case of the present volume, particularly the part of it last formed. Although it had been conjectured, from the feel in the living body, to be made up of different parts, it was found to be only one tumour, some

parts of which were more prominent than others ; and, from the substance of the whole being soft, there seemed to be a degree of motion, beyond what really took place. On viewing the cut surface of the section, it had no evident organized structure, but looked like jelly, except at one part, which was more dense than the rest, and there some ligamentous bands were faintly seen, crossing the jelly in different directions.

When the tumour had been macerated in water for three days, in a cold season of the year, and was re-examined, its substance had become looser, and more distinct ; ligamentous bands, of a very slender texture, were readily observed in every part of it, forming a network, in the interstices of which a substance, resembling imperfect granulations, was included. In two or three places there were small cells in the soft substance, distinctly seen by a magnifying glass, which, as the tumour increased in size, might have become hydatids.

Here then, from what has been stated, are three different kinds of tumours capable of becoming cancer: one forming what is vulgarly called the stony cancer, on account of its hardness; another from the indolence of its nature, and the length of time during which it produces no symptoms, may be called the indolent cancer; and a third, which has not, I believe, before been accurately described, and may be called the soft cancer. This last, in its progress, will more resemble the fungated sore, than the cancer arising from scirrhus.

While the tumour is perfectly circumscribed, and the surrounding natural parts, immediately in contact with it, have their healthy structure, and the tumour itself gives no pain or uneasiness, it seems that we may consider it as not having yet assumed the cancerous action; but when the tumour begins to give pain, and thereby shews that some change is taking place in it, there is reason to conclude that it is now acquiring the power of forming the cancerous poison.

Whether it gives pain or not, if it is increasing in size, and becomes adherent to the parts immediately surrounding it, there is not only reason to believe that the cancerous poison is already formed, but that the surrounding parts are absolutely contaminated by it, to a certain extent.

When the disease originates, not in a distinct tumour, but in a small portion of the glandular structure of the breast becoming hard, which is very commonly the case, it is readily distinguished by the hard part never having been perfectly circumscribed from the beginning, giving more the feel of a knot, in the gland itself, than a substance distinct from it. The alarm, in such cases, cannot be taken too early, nor the operation too soon recommended; since a glandular structure, when once it has acquired an indurated state, proceeds very rapidly in the changes which render it capable of forming the cancerous poison.

When the glands in the axilla, or below

the clavicle, are contaminated, it is too late to perform the operation with any assurance of success. In some cases, the glands in the axilla, although enlarged, are only sympathetically affected, or naturally of an unusual size. If the cause be sympathy, they will be found to have varied in size, at different times: if natural formation, those in the opposite axilla will be equally large. When this is ascertained, no attention need be paid to them in the operation, but where they have been gradually increasing, the contamination has, in general, gone much further than the knife can reach.

Were the breast and testicle liable to no other tumours but those which have been mentioned, the above modes of distinguishing them into these two different stages would be a tolerable guide to the practitioner; but in both of these glands there are tumours of more frequent occurrence, which are, from their origin, of a scrofulous nature. These afterwards go into a scrofulous suppuration, and

therefore are liable to be mistaken for the cancerous tumour, in that stage in which it contaminates the surrounding parts, or after it has formed the cancerous poison.

Scrofulous tumours, it is true, are, in general, less compact; of course neither so hard nor so heavy as those of the true cancer. In their progress towards the skin, they are less liable to have the skin affected, and tucked down upon the tumour. But so much does the same disease differ, in its appearances in different patients, from the endless peculiarities of their constitutions, by which every part of the body must be more or less influenced, that it is not possible, in practice, to distinguish, in all cases, between cancerous and scrofulous tumours, after they have advanced to a certain size; and I am ready to confess, that, in many instances, I have mistaken the one for the other, and have removed, by operation, tumours, which, at the time, had the appearance of being cancerous; and, upon examination, after

their removal, found them of a scrofulous nature. On the other hand, I have neglected to remove tumours, from the circumstances making it probable that they were scrofulous; which afterwards became cancerous, and destroyed the patient.

As this is a mistake to which we are so liable, and as such tumours, whether in their origin, they may be of the indolent hard kind, or of a scrofulous nature, are capable of undergoing those changes which render them cancerous, it would be a wise practice to remove them by operation, in the earlier stages of their growth. It may not be improper to mention here, that although cancerous and scrofulous tumours may be occasionally mistaken for each other, there are other complaints to which the breast and testicle are liable, arising from other causes, which can be readily distinguished from both the one and the other.

In some instances hydatids are met with both in the breast and testicle, so deep seated,

and so tense, from fullness, that they have been mistaken for solid tumours, and removed as such. In these cases, the discovery of a bag, containing a pellucid fluid, is an agreeable surprise, since it dissipates all alarm respecting the success of the operation : at the same time the necessity of its having been performed is not lessened, since nothing else could have removed the disease.

If the foregoing account of the origin of cancer is just, and could be made familiar to the minds of those who are liable to the disease, as well as to their medical attendants, every tumour that could ultimately lead to the formation of this poison, might either be dispersed or removed before that change had taken place in it. But, unfortunately, too many medical men, as well as patients, from seeing the want of success in those cases, where the operation has been performed too late, have come to the conclusion, that such failures have arisen from the whole constitution being contaminated,

and therefore that the local appearance was only the consequence of a diseased state of the whole mass of blood. Others again, and those the greater number, are of opinion, that the lump in the breast is either a cancer from the beginning, first in the state of scirrhus, and afterwards as an open cancer, or will never afterwards become one: they therefore allow all tumours in the breast, which have not the character of scirrhus, to remain till that character is acquired; and when the local poison is once generated, and has acquired the power of contamination, it is often too late to have the operation successfully performed.

From these two causes, many cases of cancer have advanced too far before an operation is proposed; and it is then resorted to as a desperate experiment. Another misfortune is, that many such tumours are not perceived by the patient till they begin to give pain, and consequently have become active in their progress; and the surgeon, who is

to decide upon the nature of the case, and the mode of treatment, is not consulted till the disease has contaminated the neighbouring parts.

When the disease has arrived at this stage, it requires no small experience, and no common judgment to determine when the operation may be performed with a probable chance of success; and in what cases it ought not to be attempted.

Mr. Nooth's experience, which enables him to assert, "that in 102 scirrhus cases, "in the early stage of the disease, where he "performed the operation, all remained free "from any return of the complaint,"* is sufficient evidence to enable us to conclude, that there is a stage of the disease, in which the operation will be always attended with success.

In the year 1773, it was the opinion of the most eminent surgeons in London, that

* Observations on the Treatment of Scirrhus Tumours, and Cancer of the Breast, by James Nooth.

the operation ought to be performed in all cases in which the surgeon was capable of extirpating every part that had undergone a change in its structure; for, although it was then known that the contamination sometimes precedes an alteration of structure, yet, as the contamination was invisible, nothing certain could be decided respecting it; and therefore it was thought right to give the patient the only chance that the power of art could offer. The want of success attending the greater part of the operations performed upon this principle, has established a point which could not have been otherwise ascertained. It has produced complete proof that the contamination does generally precede the absolute alteration in structure; and, in too many instances, to a much greater extent than it was reasonable to imagine. This fact, which has only been lately established, should be made universally known, as being essentially necessary to guide us in our judgment, respecting the

propriety of performing an operation; and I am ready to confess, that in all cases where the disease had arrived at that stage, in which it has acquired the power of contamination, I should be inclined, from the experience I have had, to doubt the success of the operation, and therefore would not venture to press it upon the mind of any patient. But, if the patient should desire the operation, I would not refuse to perform it; since whatever my own doubts may be, I am not able to bring proof that the operation will always be unsuccessful.

In the great number of cases which have been here stated, there is only one that proved successful, when the operation was performed after contamination had taken place;* and this arose from the contamination having extended itself only just beyond the edge of the wound made by the knife, where, as soon as the diseased action took place, the part was extirpated.

* Case xvi. page 68.

This case explains the extent of the contamination beyond the original tumour, and proves, that such contamination in the skin does not, in the first instance, produce the smallest change in the appearance of the part so affected. We also learn from it that the operation hurries on the diseased action in contaminated parts, faster than it would have otherwise proceeded, which fortunately happened in this instance, to the full extent of the contamination.

One reason which has been given for performing the operation, in cases that are doubtful respecting its success, was, that a great point is gained by the removal of the original tumour, as a sore, or open cancer, is thus prevented in that part, whatever consequent ones may arise; and therefore the sufferings that have been undergone in the operation are more than compensated by this advantage. I confess myself to have been of this opinion, and to have performed the operation, in several instances, upon this

ground. I am, however, now led to believe that it is not tenable, since the disease too often recurs in the cicatrix of the wound made by the operation, and increases more rapidly than it would otherwise have done.

There is also another reason against performing an operation under dubious circumstances, which is, that it is a peculiar character of cancer, when the original disease has once arrived at the state of an open sore, not to continue to make progress as it did before, but often to remain for months, and even years, with very little apparent increase, although the disease is making rapid advances in those parts which have been contaminated from it. This circumstance is fully proved by the first case in the present work, where the disease in the glans penis became as it were dormant, while the ravages committed in the groins were extremely violent. I have frequently seen exactly the same thing in the breast.

In one case, the ulcer in the breast, when last examined, was neither so large, nor so painful as it had been six months before, the edges having skinned over, and being more turned in than they were at that time.*

If, then, it should be found, upon a due consideration of all the circumstances, that the operation, when performed too late to remove the disease completely, hurries on the symptoms in the parts already affected by it, and gives activity to its contaminating powers, without any equivalent advantage, we should weigh and consider well the circumstances of every particular case, before we venture to perform it.

The foregoing observations are very strongly confirmed by what happens to almost every practitioner in surgery; who, in the early part of his practice, advises the operation, and performs it with very sanguine hopes of success, in cases in which, at a more advanced period of his life, from

* Vide Case xi. page 55.

the experience he had acquired, he would not have proposed it. This happened to Mr. Hunter, has happened to myself, and to those practitioners of whose judgment I have the highest opinion.

CHAPTER X.

OF THE ADVANTAGES AND DISADVANTAGES
ATTENDING THE DIFFERENT MODES EM-
PLOYED FOR THE EXTIRPATION OF CANCER.

THERE are two modes by which a cancer may be extirpated; one is taking out all the parts that are diseased, by a cutting instrument; the other, making use of such applications as will render them dead, and thereby occasion their being thrown off.

The advantages attending the operation by the knife, are such as to give it a decided preference in all cancerous diseases. It is the only mode which is capable, in the more advanced state of the disease, of removing the contaminated parts to a great

extent; and, in doing it, the surgeon is enabled to take away, with precision, every part he thinks liable to have been affected. When the operation is over, he can examine the diseased part that has been extirpated, and see whether it is every where surrounded by healthy parts; and, if it is not, by referring it to its natural situation, can remove any part which may give him the least cause to suppose that it is contaminated. The skin, after such an operation, is in a loose state, and admits of its edges being brought together, so that the wound may always be much diminished in size; and, in very many instances, the cut edges may be brought together like those of a simple incision.

The operation is only of a few minutes continuance, and the moment it is over, the parts are in a state to commence the process which is necessary for their recovery; and, in the course of two or three weeks, they are entirely healed, even where the disease has not been completely removed.

The modes of deadening the diseased part, which have, at different times, been employed, are three; and as these have sometimes been preferred to the operation by the knife, and some of them are still in use, it becomes necessary to explain in what way they acquired their reputation, and to shew the disadvantages which attend their operation.

In the earlier times, when the knowledge of cancer was still more imperfect than it is at present, an idea was entertained of its growth being similar to that of a vegetable; and it was therefore thought, that unless it was taken out by the roots, the disease was not completely removed. It was then found that very active caustics were capable of deadening the whole tumour, which is always more or less of an irregular form; and when the diseased part was thus brought away, the projecting portions were considered as the roots of the cancer; and the proof of its being completely eradicated was, that the

sore readily admitted of being healed. Any recurrence of the disease, from the contaminated parts, which had not been destroyed, was supposed to arise from the constitution having been in a diseased state, and not from any failure of the action of the caustic: and in this way the original idea of its being a constitutional disease was most probably formed.

The fact is, that diseased parts have less powers of supporting themselves than healthy ones, and therefore are more readily destroyed; so that a powerful caustic acts to twice the extent, in a diseased part, to what it does in a natural one: and an indolent tumour can have every part of it deadened by means that would only produce a violent inflammation upon the common skin. It was therefore by no means an unfair conclusion, till it was contradicted by experience, that such applications as were capable of deadening every part that was in a diseased state, without acting upon the healthy surrounding

parts, were to be preferred to the operation by the knife; and it is within my own remembrance, that such an opinion was general in London. Since that time, two things have been ascertained, which prove, that when the tumour has become cancerous, such caustic applications are incapable of removing the disease entirely; the one, that when the poison is once formed, the contamination precedes, and extends beyond the diseased alteration of structure; the other, that every thing which irritates the diseased part increases its action, and its power of contamination: and, in fact, all regular practitioners have laid aside the arsenical applications to cancerous tumours in the breast, in consequence of finding that the disease was rarely removed by them.

They still retain a certain degree of reputation, and are used by several empirics in London; and cures performed in this way are well authenticated; that is, they succeed when applied to tumours, which are yet in

an indolent state, if they are sufficiently powerful to destroy the whole tumour; and as there is no possibility of ascertaining what the structure of the tumour was, which has been thus destroyed, it is stated by the practitioner to have been an inveterate cancer, which is attempted to be proved by shewing its roots, or the irregularities upon its external surface. But the caustic, when too weak for the destruction of the diseased part, irritates, and makes it sooner become cancerous. When applied to a cancerous tumour, although strong enough to deaden the whole, it irritates the surrounding parts that have been previously contaminated, and makes them sooner assume the characters of the disease. This not only happens when caustic applications are used, but when mortification takes place from any other cause, as in the case stated in a former part of this work.*

This fact of the contaminating power of morbid poisons being increased by any thing

* Vide page 91.

that irritates the diseased parts, is not peculiar to cancer. It happens also in the venereal disease, of which too many instances have come under my own observation.

It has been, for some years, a favourite practice to attempt the cure of chancres by touching them with caustic, while yet of a small size, and repeating the application till a sound surface is exposed, after the slough has been thrown off, and then to allow it to heal. The effect of this practice is exactly similar to what has been stated. The chancre is cured, but the poison is absorbed, and the constitution contaminated by the disease. But if the chancre be so small, when the caustic is first applied, that the whole ulcer, and some of the surrounding parts, are deadened completely by one application, the patient will then be perfectly cured of the disease; as there was not time for absorption before the application was made, and its effects were such as to preclude its taking place afterwards. If, on the contrary, the first application only

destroys a part of the disease, it irritates the absorbents, and gives them a disposition to take up the poison at an earlier stage than is usual. From an experience of this being the case, I have, for many years, intirely left off the practice of using such modes of treatment, in the early stages of chancres.

The caustic applications which have been employed for the destruction of cancerous tumours are the following: arsenic, corrosive sublimate, and the actual cautery. As these means are also used for the purpose of removing other tumours, whose structure prevents the knife from being employed, I have had frequent opportunities of making observations on their comparative effects. Indeed, the statement contained in the second case which has been mentioned in this volume, explains their different effects upon the same person, so as to afford us the most satisfactory information respecting them.

The only preparation of arsenic which I have used, is equal parts of the white arsenic

and sulphur;* this acts as a powerful caustic, and appears capable of destroying any tumour which has not acquired the disposition to throw out a fungus. The sloughs formed by each application will be very much in proportion to the quantity of the powder applied. By this means I have removed a large tumour in the cheek, which appeared to be taking on the previous state to becoming a cancer. I have also destroyed a large tumour in the foot. In the last case it certainly affected the constitution, in a manner very similar to what has been already described. In the other, no such effect was produced; so that it would appear that the arsenic is in some cases absorbed more readily than in others.

The local effect of arsenic is that of producing so violent a degree of inflammation in the part to which it is applied, that mortification ensues. When applied to the stomach,

* These proportions were first recommended to me by Mr. Cline.

indeed, it destroys the patient before mortification absolutely takes place; and the apparent effects of inflammation upon the part, are not such as would destroy life, were they produced by any other cause. It is to be presumed therefore that the arsenic, taken internally, kills by being absorbed, and producing effects in the circulation incompatible with life. Several instances of patients dying from the effects of arsenic upon the internal coat of the stomach, have come under my observation, and specimens of its local effects are preserved among the morbid preparations in the Hunterian Museum.

Corrosive sublimate appears to act both locally and constitutionally, as well as arsenic. Its local effects are however less powerful, destroying parts to a less extent, and the constitutional effects from absorption are more like those common to the different preparations of mercury than to those of arsenic.

The actual cautery is, at present, almost

intirely disused in surgery, except in cases of diseased bones, where it is employed to produce death in the part affected, and, in that way, put an end to the disease. It is a much milder application than either of the above, gives less pain while acting locally, and produces no constitutional disturbance; and where it is necessary to keep at bay a fungous excrescence, whose growth is not very luxuriant, I should prefer it to the others, from a belief that it does not in the same degree hurry on the diseased action of the tumour. In cases of fungous tumours in the mouth, it is the only means that can be employed; and in an instance of that kind, the disease was kept under for seven or eight months, by its occasional use, without much pain being produced, or the disease being at all advanced in consequence of the application.

This account of the effects of caustic applications, is given in this place, to shew in what they differ from the operation by

the knife; and, when compared with it, what are their disadvantages, in cases of cancer; although, in other tumours, of a less malignant nature, they may be employed with success.

CHAPTER XI.

ON THE MODE OF EXTIRPATING CANCEROUS
PARTS BY THE KNIFE.

IN the last chapter, a decided preference is given to the use of the knife, in the extirpation of cancerous parts ; and it is intended here to lay down such directions as may be of use to the surgeon in performing the operation, and to point out the circumstances most deserving of his attention.

In describing the operations upon the different parts of the body which admit of one being performed, I shall follow the same order in which the cases are placed, that illustrate the symptoms of the disease.

ON THE EXTIRPATION OF TUMOURS IN THE
BREAST.

PREVIOUS to performing an operation, to extirpate a tumour in the breast, which has already become cancerous, or is suspected to have a tendency to that disease, the parts should be examined with great accuracy, that the surgeon may not be embarrassed in the time of the operation, by meeting with circumstances for which he was unprepared.

If the preceding cases are read with attention, it will be found that one surgeon failed in consequence of a gland afterwards enlarging towards the sternum. If the parts had been accurately examined in that direction, this gland, in a very early stage of the disease, from its external situation, might probably have been detected and extirpated. In another case, extirpation by means of

caustic was boldly recommended, where two glands above the clavicle were diseased, which had been overlooked in the examination.

It is not only necessary to ascertain those parts which have undergone a change in their structure, but to endeavour to discover, from the situation and circumstances of the tumour, in what direction contamination is most likely to have taken place. If the tumour is above the nipple, the glands towards the clavicle are in the greatest danger: if it is between the nipple and sternum, which is not frequently the case, then the glands in the intercostal spaces, near the sternum, are to be examined with accuracy; and if the tumour is situated close to the nipple, below it, or between it and the axilla, then the glands in the axilla are to be most particularly attended to. Whatever the situation of the tumour, if it has approached near to the skin, there is great reason to fear that some part of the skin has been contaminated, and

therefore all the suspected parts should be removed by the knife.

In performing the operation, the person being placed in a chair, in a sitting posture, appears to be more easy for the patient, and much more convenient than any other posture for the surgeon.

If the tumour is so deeply seated that there is no probability of the skin having been affected, then one incision only is necessary through the common integuments. It should, however, be made sufficiently extensive to allow the tumour to be readily come at. If it is determined that a part of the skin should be removed with the tumour, two incisions are to be made, forming an oval figure between them, in which all the skin, to be taken away, is included; and as dividing the skin is the most painful part of the operation, both these incisions should be completed before any thing else is done; and the lower part of the skin should be divided first, since, if a wound is made in

the upper part, the effused blood covers the skin below, and prevents the surgeon from seeing accurately where the second incision ought to be made. These incisions should be nearly in the direction of the fibres of the pectoral muscle, for the following reasons. The deep-seated glands of the axilla may be found diseased, although not to be distinguished by the feel previous to the operation; and, when that is the case, if the incision is made in this direction, they are readily come at; and, when very high up in the axilla, an extension of the incision is all that is necessary; but if the incision is made in the contrary direction, it is hardly possible to come at them, or to secure the vessels which supply them with blood. The arteries which supply the mamma, coming in the two opposite directions from the axilla and sternum, are also more readily come at, and secured, when the incision is in this transverse direction. It is also an advantage in the cure, as the action of the pectoral muscle

does not pull open the edges of the wound, which it must do in a greater or less degree when the wound is perpendicular.

When the tumour is perfectly circumscribed, and unconnected with the gland of the breast, there is no ground for removing more than the tumour itself, and the investing membrane which covers it; but if any part of the mamma is diseased, it is right to remove the whole gland, to ensure the success of the operation. This is best done by dissecting it from the pectoral muscle, and detaching it completely on that side next the sternum; but before it is entirely separated on the side next the axilla, the glands in that part, now that they can be freely come at, should be examined by the touch; and if any of them are hard, they should be brought away along with the tumour. In dissecting out such glands, it is a great advantage to have the large tumour connected with them, since it becomes a handle, by which they are readily pulled down, and

brought within reach ; and its weight retains them there while the surgeon is dissecting round them. In all such cases, the vessels supplying these glands are not to be divided till a needle, and double ligature, has been passed through the fat, and cellular substance, immediately beyond them, including one half of the mass, in each ligature, and thereby securing the blood vessels. If the glands are cut off without this precaution, the arteries supplying them which had been on the stretch, immediately contract into the hollow of the armpit, and are in no way again to be discovered. By such inattention of the surgeon, a patient lost her life, from effusion of blood ; as no means that were tried, succeeded in stopping the bleeding.

When every part that has undergone an alteration of structure, and all those in the vicinity, which could be reasonably suspected of contamination, have been extirpated, the next object in the operation is securing the blood vessels, so as not only

to stop the present bleeding, but to prevent, as much as possible, the chance of a secondary hæmorrhage. The vessels should be secured with a ligature, by means of the tenaculum, none of them ever being large enough to require the needle being used, which is only necessary where the femoral, or humeral artery is to be secured, to prevent the possibility of the ligature being pushed off by the pulsation of the artery. In this operation, the use of the tenaculum has a great advantage, as the ligatures come away in a few days, which materially expedites the healing of the wound. Where the needle has been employed, I have known the ligature remain more than three months, the granulations of the sore having shot into the noose, and round the knot of the ligature, so as to enclose it a second time, after its separation from the artery. This difficulty increased in proportion to the new substance formed, and force, at last, was necessary to remove it.

The operation having been completed, the next object of the surgeon is to bring the cut edges of the skin together, by means of strips of adhesive plaster, so that they may unite by the first intention. This is easily effected where no part of the skin has been removed, and, by a little attention, can generally be managed even where a large portion has been taken away. In one case, where, on the first view, it appeared impossible, it was found, upon trial, that, by making the patient bend her neck to that side, and by steadily drawing down the skin, the two cut edges came into contact, and were readily retained in that state. In such cases, the attempt should not be made immediately, the skin frequently contracting with violence, on being divided: this, however, in a few minutes, goes off, and it then admits of being again extended.

The cut edges of the wound should be simply brought into contact, and not pressed with any degree of force against each other.

If this is not attended to, the edges will turn in, and not unite at all; but, by overlapping, make the healing of the wound very tedious.

The ends of the ligatures should be brought out at the two angles of the wound, or nearly about the centre, according to the situation of the vessels secured; and just before the adhesive plaster is applied, they should be pulled quite straight, that they may afterwards more readily come away.

The adhesive plaster employed should be spread upon linen, in preference to leather, as animal substance is corroded by the oozing of bloody serum, which sometimes takes place; and, at the first dressing, the strips of plaster are all found to have been cut across, and the wound wide open. It is not only necessary that the cut edges of the skin should be brought into contact, but a regular uniform compression should be made upon all the deeper seated parts, that they also may unite, otherwise suppuration will

take place in them, and an abscess will be formed, which will make the union of the skin a disadvantage, by confining the matter. It is of much more consequence that the internal parts should be united, than the external; and, if that is completely effected, the other is of little consequence. This is a circumstance, in practice, not sufficiently attended to.

Where the whole gland of the breast is extirpated, along with the surrounding fat, and the skin comes in contact with the pectoral muscle, the parts will readily unite together; but where a small tumour is dissected out, and the surrounding fat forms the sides of the cavity, the union by the first intention, is seldom completely effected; the blood effused does not, when coagulated, readily unite with the fat, but is afterwards broken down again into a fluid form, and comes away; or, if retained, suppuration is the consequence. In such cases, the skin should not be allowed to unite entirely, but

a part of the wound should be kept open, that this blood may be readily discharged.

There is no operation in surgery in which secondary bleedings so frequently occur as in the extirpation of the breast. This is readily accounted for. The arteries go off from trunks, situated near the heart; and although from the small size of the divided arteries, they readily contract upon exposure, and the bleeding stops; yet, when they are again surrounded by living parts, the warmth makes them relax, and the least increased action of the heart forces them open.

Such secondary bleedings are prevented by great attention being paid, during the operation, to the parts from which the blood issues. This is best done by an assistant, the mind of the surgeon being, at the time, otherwise engaged; and, when the operation is completed, these parts being pointed out, the wounded vessels may be detected, although, from the effects of exposure, they

may have ceased to bleed. As, however, some small branches may not have been secured, it is a proper precaution to keep the patient in a state of perfect quietude for eight or ten hours after the operation, not allowing her to make the smallest exertion, or drink any thing but cool barley water. Where this plan has been adopted, I have not known an instance of bleeding taking place. It has the additional advantage of promoting the union of the wound by the first intention, which is of material consequence in expediting the cure.

It appears of greater advantage, after this operation, than many others, that the patient should not be confined to the house. I have known several cases in which the wound made no progress towards healing till the patient was allowed to go out. This is more necessary in young women than those advanced in life. It is probable that the loss of blood, and agitation of mind, brings on a state of irritability, which

nothing takes off so readily as exposure to fresh air.

ON THE EXTIRPATION OF THE EYE.

THE eye is an organ occasionally affected by cancer, less frequently, however, than any of the other parts mentioned in the present work. The disease shews itself by a fungus shooting out, either from the tunica conjunctiva or sclerotica, which resembles, in its progress, the fungated sore. In some instances it takes place in the cavity of the globe of the eye, which becomes filled with a substance of a fungous nature, not very unlike what is met with in the tunica albuginea testis. Instances of both these kinds have come under my own observation.

In whatever way the disease begins, its progress very soon renders the organ incapable of vision, and therefore, ever after, useless to the patient. There can be no

hesitation, under such circumstances, respecting the propriety of extirpating the eye before the disease has extended itself to the neighbouring parts.

This is an operation which must be considered as always attended with danger, since inflammation in the cavity of the eyeball sometimes runs along the optic nerve to the brain, and the patient dies in consequence of it. This, however, although it may happen, does not necessarily follow, and is much more likely to occur in the progress of disease, than to be an effect of an operation ; at least, I have seen it in two cases, in consequence of suppuration in the eye ball ; and in two instances, in which the eye was extracted, it did not take place.

It is to be presumed that this operation often proves fatal, since some of our most eminent oculists, who are in the habit of performing every other operation upon the eye, do not think it safe to perform this. In a disease of rare occurrence, which is

seldom seen by the surgeon, till it has advanced too far to admit of an operation, it is difficult to collect evidence of a satisfactory nature, upon which we can form a correct judgment: my own experience is in favour of the operation. In one case, I assisted Mr. Hunter to perform it upon a young man: it was not attended with the degree of pain I thought it must have produced: there were no distressing symptoms brought on, and the patient soon got well. I have performed it since, upon a lady who was not made acquainted, at the time, with the intended extent of the operation, and her sufferings under it were so slight that she had not the least notion of the eye being extirpated, only believed that an excrescence had been taken off from the edge of the cornea; and it was not till several days after that she was told what had been done. The symptoms of inflammation were very mild, and in a few weeks she was perfectly recovered.

In performing the operation, the first thing to be done is making an incision through the tendons of the straight muscles, near their union, at the edge of the cornea. The moment these are divided, the globe of the eye is let loose, and may be brought forwards, so as readily to be disengaged, by dissection, from the oblique muscles and the surrounding fat. It is desirable that the optic nerve should be as little disturbed as possible: the eye therefore should not be pulled out of the socket beyond what is required to allow the knife to reach the posterior part of the globe, and divide the optic nerve, which is all that is necessary to complete the operation. So much do I consider the not disturbing the optic nerve to be of importance, to the recovery of the patient, that, in those cases where the disease is confined to the anterior part of the eye, I would not even remove that portion of the sclerotic coat which surrounds its termination in the retina; but, where the disease is within the

ball, it appears absolutely necessary that the whole of the eye should be completely extirpated, although, by doing so, the risk of inflammation extending to the brain is increased.

After the operation is performed, the only treatment that is necessary is rest, in an horizontal posture, and the mildest and most superficial dressings to the eyelids, separating them by a piece of dry lint, introduced between them, to admit of a free discharge from the cavity of the orbit.

ON THE EXTIRPATION OF TUMOURS IN THE TONGUE.

THE following observations* derive their real importance from offering a safe and effectual means of removing a portion of the

* The greater part of the following observations was read before the Royal Society, in February 1803, and is published in the Philosophical Transactions.

tongue, when that organ has assumed a diseased action, the cure of which is not within the reach of medicine; and, as the tongue, like many other glandular structures, is liable to be affected by cancer, it becomes of no small importance that the fact should be generally known. In a physiological view, these observations tend to shew, that the internal structure of the tongue is not of that delicate and sensible nature which, from its being the organ of taste, we should be led to imagine.

The tongue is made up of fasciculi of muscular fibres, with an intermediate substance met with in no other part of the body, and a vast number of small glands. It has large nerves passing through it; and the tip possesses great sensibility, fitting it for the purpose of taste.

Whether the sense of taste is confined entirely to the point of the tongue, and the other parts are made up of muscles fitted for giving it motion; or whether the whole

tongue is to be considered as the organ, and the soft matter which pervades its substance, and fills the interstices between the fasciculi of muscular fibres, is to be considered as connected with sensation, has not, I believe, been ascertained.

The tongue, throughout its substance, has always been considered by physiologists as a very delicate organ; and it was believed, that any injury committed upon it would not only produce great local irritation, but also affect, in a violent degree, the general system of the body. This was my own opinion, till I met with the following case, the circumstances of which induced me to see this organ in a different point of view.

A gentleman, by an accident which it is unnecessary to describe, had his tongue bitten with great violence. The immediate effect of the injury was great local pain; but it was not attended with much swelling of the tongue itself, nor any other symptom, except that the point of the tongue entirely

lost its sensibility, which deprived it of the power of taste: whatever substance the patient eat was equally insipid. This alarmed him very much, and induced him to state to me the circumstances of his case, and request my opinion. I examined the tongue, a fortnight after the accident. It had the natural appearance, but the tip was completely insensible, and was like a piece of board in his mouth, rendering the act of eating a very unpleasant operation. I saw him three months afterwards, and it was still in nearly the same state.

From this case it appears, that the tongue itself is not particularly irritable; but that the nerves passing through its substance to supply the tip, which forms the organ of taste, are very readily deprived of their natural action; this probably arises from their being softer in texture than nerves in general, and, in that respect, resembling those belonging to the other organs of sense.

There was another circumstance in this

case which very particularly struck my attention; namely, that a bruise upon the nerves of the tongue, sufficient to deprive them of the power of communicating sensation, was productive of no inflammation or irritation in the nervous trunk, so as to induce spasms, which too commonly occur from injuries done to the nerves belonging to voluntary muscles. I am therefore led to believe, that the nerves supplying an organ of sense, are not so liable to such effects as those which belong to the other parts of the body.

The small degree of mischief which was produced, and the readiness with which the nerves had their communication completely cut off, were, to me, new facts, and encouraged me, in the following case of fungous excrescence from the tongue, which bled so profusely as at times to endanger the patient's life, and never allowed him to arrive at a state of tolerable health, to attempt removing the part by ligature.

CASE I.

JOHN WEYMOUTH, eight years of age, was admitted into St. George's hospital, on the 24th of December, 1800, on account of a fungous excrescence on the right side of the anterior part of the tongue, which extended nearly from the outer edge to the middle line at the tip. It appeared, from the account of his relations, that the origin of this fungus existed at his birth, and had been increasing ever since. He had been a year and a half under the care of the late Mr. CRUIKSHANK, who had removed the excrescence by ligature round its base; but, when the ligature dropped off, a violent hæmorrhage took place, and the excrescence gradually returned. Attempts were made to destroy it by caustic; but hæmorrhage always followed the separation of the sloughs; so that, after ten trials, this mode was found ineffectual.

It was also removed by the knife, ten different times, but always returned.

From this history I was led to believe, that the only mode of removing the disease was taking out the portion of the tongue upon which it grew. This was a case in which I felt myself warranted in making an attempt out of the common line of practice, to give the patient a chance of recovery; and, from the preceding case, having found that pressure on one part of the tongue produced no bad consequences on the other parts, I was led to remove the excrescence in the following manner.

On the 28th of December, I made the boy hold out his tongue, and passed a crooked needle, armed with a double ligature, directly through its substance, immediately beyond the excrescence. The needle was brought out below, leaving the ligatures; one of these was tied very tight before the excrescence, the other equally so beyond it, so that a segment of the tongue was con-

finned between these two ligatures, in which the circulation was completely stopped. The tongue was thin in its substance; and the boy complained of little pain during the operation. Thirty drops of laudanum were given to him immediately after it, and he was put to bed. He fell asleep, continued to dose the greater part of the day, and was so easy the next day as to require no particular attention. On the fifth day from the operation, the portion of tongue came away with the ligatures, leaving a sloughy surface, which was thrown off on the 11th day, and was succeeded by a similar slough; this separated on the 15th day. The excavation after this gradually filled up; and, on the 20th day, it was completely cicatrized, leaving only a small fissure on that side of the tongue.

Encouraged by the result of this case, I was led to perform a similar operation upon a person at a more advanced period of life.

CASE II.

MARGARET DALTON, 40 years of age, was admitted into St. George's hospital, on the 25th of December, 1801, on account of a tumour, the size of a pea, situated on the right side of the tongue, near its edge. The history of the case was as follows. A small pimple appeared, and gradually increased, without pain; the only inconvenience was, that it affected her speech, and, when bruised by the teeth, bled freely.

The operation was performed on the 11th of January, 1802, exactly in the same manner as has been already described. It produced a considerable degree of salivation, which was extremely troublesome, (much more so than the pain the ligatures produced,) and continued till the slough came away. The ligature nearest the root of the tongue separated on the 6th day; the other

on the 7th; and, in three days after the separation of the second ligature, the wound was completely skinned over.

CASE III.

A CASE of this kind came under my observation, in which there was a small tumour in the substance of the tongue, about the size of a pea, which gave me the idea of its being of that kind which might terminate in cancer. The patient was a gentleman of about 41 years of age. Upon examining the tumour, I told him of my alarm respecting its nature; and at the same time added, that I was very ready to remove it, should it be the opinion of other practitioners that such a step was adviseable; and my experience in two former cases led me to believe it might be done with safety. I therefore advised him to consult other medical practitioners of reputation, and acquaint

me with their opinion. Mr. CLINE was consulted, and his opinion coincided with mine; which made the patient decide upon having the tumour removed.

The operation was performed on the 28th of December, 1802. The needle pierced the tongue an inch beyond the tip, a little to the right of the middle line of the tongue; and the space between the two ligatures, when they were tied at the circumference of the tongue, was fully an inch. The tongue was thick; and the mass included by the ligatures was such as to make it difficult to compress it. The operation gave considerable pain, of a numbing kind. Immediately after the operation, the part included became dark coloured, particularly towards the middle line of the tongue. A salivation took place. The next day, the pain and salivation were great, and the patient could not swallow; but, on the day following, he could take broth, negus, and other fluids.

On the 6th day from the operation, the

slough became loose ; and the least motion of the tongue gave great pain. Upon examining the slough, there was a small spot which looked red, and was surrounded by a dark surface ; this was towards the right side. Upon further examination it appeared, that the ligature to the right had not completely deadened the part at the centre, in which the artery had its course. This accounted for the red spot, as well as for the pain the patient suffered ; and led me, on the seventh day, to disengage the ligature on the left, (which was almost completely separated,) by means of a pair of scissors, and pass another ligature through the groove to the opposite side, and tie it over the part not completely deadened. This gave great pain for a few hours, which was relieved by the use of tincture of opium. On the 8th day, the patient had less pain than on any preceding day, and less salivation ; and, on the 9th, the whole slough came away. On the 13th, the tongue had so much recovered

itself, that there did not appear any loss of substance whatever, only a fissure of half an inch in depth, in the anterior part of it; and, as that now seemed to be exactly in the centre, there was not the smallest deformity.

CASE IV.

A GENTLEMAN, 59 years of age, had a tumour upon the side of the tongue, of the size of a hazle nut, only more oblong. He had no knowledge of its origin, and was ignorant of any circumstance that could have produced it. He first perceived it six months before; and, for the last two months, its increase had been very rapid. On the 12th of November, 1804, I was consulted. The tumour, upon examination, was found distinct from the substance of the tongue, and perfectly circumscribed. I advised its removal, and my opinion was acceded to.

The operation was performed on the 13th, in the following manner. I passed a needle, with a double ligature, behind the central part of the tumour, and made a single knot upon each ligature, including the tumour between them, and finding the external covering of the tongue very tense over the tumour, I made an incision through it with a lancet, the whole length of the tumour, down to its substance, and dissected its surface to some extent. By this means, the tumour on that side next the edge of the tongue was disengaged; and, by tightening the ligatures, it was squeezed out of its bed, and entirely disengaged; so that the compression of the ligatures was rendered more perfect, the tension being removed, and the parts included were completely deadened. He expressed very little pain at the time, but was advised to lie down upon the bed, which he did.

Upon examining the tumour, by cutting through its centre, the section had an oval

form; its substance was of a yellowish white colour; one portion was compact in its texture, and had evidently been the first formed; the other was looser, more like pulpy granulations, or the first stage of the fungated sore, but not so distinctly striated.

Nov. 14th. He continued uneasy, but not in much pain, for about twelve hours, and then the parts became quiet. The flow of the saliva was increased during that period, but not in a great degree; and he had a slight soreness in his throat. He was able to speak very plain, went about the house, and took fluid nourishment, with bread in it, without difficulty.

The parts compressed by the ligatures had the circulation completely stopped, so that the exposed sore looked like a bit of dirty lint, without the smallest appearance of red colour.

Nov. 16th. He had a slight degree of pain, when the tongue was moved, from the ligatures being disturbed by the motion, but

had no other symptom. The tongue itself was less swelled, less inflamed, and less white than in the other cases, which, probably, was the consequence of the ligatures having completely deadened the parts to which they were applied.

Nov. 18th. Speaking, and particularly eating, gave more pain: the salivation was also increased. These symptoms were brought on by eating animal food at dinner. The slough had become quite black, and extremely offensive. In the evening, one of the ligatures came away; and, about ten o'clock at night, the whole slough separated. This was in five days and eight hours. The surface of the tongue, from which the ligatures came away, was extremely tender all next day, and a little swelled; but, on the 20th, the pain was much abated, the tongue less tumid, and the edges of the sore were contracted, and had put on a healing appearance.

In a few days, the sore was completely

healed, and the parts had so much recovered themselves that the loss was hardly apparent.

CASE V.

A GENTLEMAN, about 60 years of age, consulted Sir W. Blizard, on account of a tumour in the tongue, of the size of what is called a swan shot. It was hard, and firmly connected with the surrounding parts. Its situation was close to the edge, which rendered it liable to be irritated by the teeth. Sir William advised that it should be removed, and requested me to be present at the operation. He passed a needle, with a double ligature, through the tongue, at a small distance behind the tumour. One ligature was tied so as to include the edge of the tongue before the tumour, and the other in the same way behind it. When the ligature was first tied, it gave a good deal of

pain; but, when pulled very tight, the pain was no longer felt, the sensibility of the parts being destroyed. After the operation, the patient sat down to dinner, and entertained his guests with great cheerfulness and hospitality; and, when we took our leave, expressed himself very little incommoded by pain. On the sixth day, the ligatures came away; and, a few weeks afterwards, upon meeting him accidentally, he shewed me his tongue, and I could just perceive a slight indentation in the part from which the tumour had been removed.

CASE VI.

Winchester, July 19th, 1804.

SIR,

FROM reading your paper, in the Philosophical Transactions, on the structure of the tongue, and the practicability of removing a portion of it, when diseased, I was

induced to make the experiment on a case that lately occurred to me in the county hospital here; and, as it proved satisfactory to me, and to every person who saw it, I have taken the liberty of communicating the particulars to you.

Mary Wingham, aged 23, was admitted into the hospital, under my care, on the 11th of April, for a cancerous ulcer upon the tongue, extending from the outer edge of the left side to nearly the middle of the tongue, occupying a part about the size of a shilling. After trying the usual remedies without success, I proposed to remove it by ligature. As the woman had not received any benefit from the applications tried, she willingly acceded to my proposal. Accordingly, on the 25th of June, I passed a needle, armed with a double ligature, through the tongue, a little beyond the diseased part, and tied each, one before, the other behind the ulcer, in the manner you recommend. Very little pain was produced, and the only

inconvenience was an increased secretion of saliva, and a little difficulty of swallowing, which continued only for the first two days. On the 6th day, the slough began to come away, and continued so to do till the 9th, when I discovered a small portion of it not quite deadened by the ligature nearest the root of the tongue; I therefore passed another round it; and the next morning, being the 10th day after the operation, the whole came away. The wound gradually healed, and she was discharged the hospital, perfectly well, on July 18th (yesterday, the 23d day after the operation).

Her speech, before the operation, was so bad, that she could scarcely be understood, and it continued so till the sore was nearly healed; but, when healed, it became as good as it was before her tongue was first diseased.

I have the honor to remain, &c.

W. WICKHAM.

Two cases of this operation, published by Mr. Inglis, form an addition of considerable importance to those that have been stated.*

The preceding cases enable us to draw the following conclusions.

The internal structure of the tongue is less irritable than almost any other organized part of the body; therefore, the peculiar substance which is interposed between the fasciculi of its muscular fibres, is not in any respect connected with the nerves which pass through its substance to the organ of taste, but is merely a soft medium, to admit of great facility of action in its different parts.

The nerves of the tongue appear to be more readily compressed, and deprived of their power of communicating sensation, than nerves in general; and any injury

* Cases in which diseased portions of the tongue were successfully removed, by means of Ligature, by Andrew Inglis, Fellow of the Royal College of Surgeons, and one of the Surgeons of the Royal Infirmary of Edinburgh.

done to them is not productive of diseased action in the trunk of the injured nerve.

If we compare the effects of compression upon a portion of the tongue, with those of a similar compression upon the hæmorrhoidal veins when they form piles, or those of the testicle in cases of varicose veins of the spermatic chord, which not only produce very violent local inflammation, but also a considerable degree of symptomatic fever, it is impossible not to be surprised that the results should be so very different; since we are led to believe, upon a general principle, that parts are sensible in proportion to their vascularity, and that all the organs of sense, when inflamed, are more exquisitely so than any other parts of the body.

The tongue appears to have a power of throwing off its sloughs in a shorter time than any other part. Eight or nine days is the ordinary time of a slough separating from the common parts: in the first of these cases, it was only five; and, in the fourth, very

little more. The sloughs, in the other cases, being more tedious, probably arose from the ligatures not having completely deadened the parts; they should therefore, in this operation, be drawn as tight as possible. The best rule will be to continue increasing the compression till the patient no longer feels pain. This not only makes the ligatures separate sooner, which is a great advantage, but prevents the pain produced by the inflammation brought upon the strangulated part.

Having stated the information we derive from these cases, respecting the structure, sensibility, and irritability of the tongue, it now remains to mention the advantage to be derived from them in a professional view.

The information derived from these cases, enables us to attempt with safety, the removal of any part of the tongue which may have shewn a disposition to become cancerous. As this disease in the tongue always begins in a very small portion of that organ,

it is, in the early stage, more within the reach of removal than when in any other part of the body ; and, as the glands of the tongue are independent of each other, the cancerous disposition by which one of them is attacked, does not so readily communicate itself to the others ; and the part may be removed, with a greater degree of security against a future recurrence of the disease, than in other cases where this malady attacks a portion of a large gland, the whole of which may be under the influence of the poison, long before there is any appearance of its being diseased.

ON THE EXTIRPATION OF THE TESTICLE.

IN performing the operation of extirpating the testicle, when in the state of cancer, as it is impossible to know the extent of the disease, the attention of the surgeon ought to be particularly called to the state of the scrotum, and of the spermatic chord.

It will be seen in the preceding cases, that the skin of the scrotum becomes contaminated sooner than any of the other surrounding parts, and therefore the first object in the operation should be marking out that portion of the skin which it is thought proper to remove. This being done, the next thing is to dissect out the diseased testicle from its situation in the scrotum, taking care that the incision should always be in the sound and natural parts, and that every thing connected with the disease is left attached to the testicle itself. Having gone

thus far, the chord is to be examined, and dissected as high up as is necessary to come at a sound part, which, in the exposed state it is now in, detached from the skin and surrounding parts, can readily be ascertained. All that is necessary to complete the operation is tying the chord, which is best done by passing a needle, armed with a double ligature, through it, in the interstice, between the portion composed of the vas deferens and spermatic artery, and the loose veins, and other parts, which, in a diseased state of the testicle, are found much increased in size, and very vascular. These ligatures are to be tied sufficiently tight to deaden the substance which is included in them, and then the chord is to be divided.

The cut edges of the scrotum are to be brought together, and retained there by needle and ligature, adhesive plaster, or, simply by compresses of lint, according to the peculiar circumstances of the case.

It is a common practice, which is adopted

by surgeons of eminence, to cut down upon the chord, in the first instance; and, after exposing it for an inch in length, to pass a ligature behind it; and, having thus included the chord, and secured the spermatic artery, divide it below the ligature, and afterwards dissect out the testicle, like any other detached tumour. The motives for this practice are founded in humanity, since the moment the nerves of the testicle are cut through, the patient will be sensible of no material pain during the rest of the operation. This advantage appears to me to be more than counter-balanced by the risk there is of the operation not being completed in the most satisfactory manner.

The first consideration in every operation in surgery is, that it should be so performed as to leave nothing to chance, and that the patient should have every security that the operation can afford him: its being done with a less or greater degree of pain, however desirable it may be that it should be as

small as possible, is therefore only a secondary object.

From not seeing operations in this extensive view, young surgeons, upon slight grounds, are induced, by theoretical opinions, to vary their mode of performing them, and too often make themselves liable to meet with more serious difficulties than those which they feared to encounter.

In this operation it is even recommended to cut down upon the chord, expose the spermatic artery, include it by itself in a ligature; and, by this neat and delicate operation, save the patient much pain. Those cases, however, which require an operation, have the chord, frequently, much thickened, and consequently much more vascular than in its natural state. I have known a surgeon take up the spermatic artery alone, then five or six vessels one by one; and, after having kept the patient the time necessary for this purpose, find himself obliged to include the whole chord in a strong ligature, so many other vessels continued to bleed.

As no two cases of the same disease are exactly alike, however similar they may appear to be, every case requires to be more or less investigated during the operation, and that mode of operation which enables the surgeon to do this most completely, has, in that respect, a great advantage.

The objections to tying the chord in the first instance, are not theoretical, but arise from the disadvantages that attend it in practice, two of which will now be explained.

In two cases of extirpation of the testicle, in which a ligature was passed behind the chord, to secure it, the chord was so much thickened, that the pressure made by the ligature proved insufficient to secure the artery, and a secondary bleeding took place. In one of them, this was not the only distress, for the substance of the chord was not deadened by the pressure, and a fungus formed on the cut end of the chord, which became extremely troublesome, and the ligature did not separate till after it was destroyed.

Neither of these untoward circumstances could have occurred, if the chord had been previously dissected, and brought within the reach of accurate examination, and the mass divided into two parts, and secured by separate ligatures.

In another case, where this mode had been adopted after the operation was completed, and the wound dressed, the patient being seized with a fit of coughing, to the astonishment and dismay of the surgeon, the dressings were forced off by a protrusion of several convolutions of small intestines; from this it was proved that the patient had had a hernia; but the diseased enlargement of the testicle had acted as a truss, and prevented the rupture from coming down. The patient supposed himself cured, and never mentioned to his surgeon the existence of this disease. He therefore, not aware of the possibility of such a circumstance, by adopting this mode of tying the chord, included the hernial sac

in the ligature, and afterwards divided it with the chord. The pressure of the bowels upon the sac, in the act of coughing, readily forced off the ligature, and shewed too late the fatal error which had been committed in the mode of performing the operation.

In the following case, if this mode of operation had been adopted, I should have fallen into a similar error, and have been prevented from investigating the true nature of the case.

CASE OF DISEASED TESTICLE, COMPLICATED WITH A HYDROCELE OF THE SPERMATIC CHORD.

WILLIAM BARKER, 37 years of age, was admitted a patient into St. George's hospital, under my care, November 8th, 1804. His complaint was a diseased enlargement of the right testicle, which, at that time, formed a hard tumour, the size of an orange. The

spermatic chord was considerably thickened, as high as the ring, but uncommonly soft to the touch, giving the impression, that whatever the thickening arose from, it was not the same disease as that in the testicle. The skin of the scrotum was in a perfectly natural state. He complained of frequent irregular attacks of deep-seated lanceolating pains through the body of the gland, always brought on, or increased, upon being handled. These pains extended up the chord to the loins, bringing on cholicky pains in the bowels, sometimes accompanied with vomiting and purging. These occurred commonly in the night, and deprived him of sleep.

About eight or nine years before, he remembered having bruised this testicle on the pummel of the saddle, while riding, which brought on pain, swelling, and inflammation in the part. He did not attend to this, but continued to do his business, as a groom, and the swelling gradually subsided. The

testicle remained apparently in a healthy state, till three months before he was received into the hospital, when the present swelling came on, producing the symptoms which have been mentioned. The disease was suspected to be venereal, and he was put through a severe course of mercury. At first, the size of the testicle began to diminish rapidly ; but, as soon as the constitution was affected by the medicine, he became irritable, lost his appetite and his flesh, and the testicle again enlarged. The chord, for the first time, became affected, and enlarged to a great degree, forming a soft swelling above the testicle, as high as the ring. This swelling was first perceived close to the testicle, and gradually extended along the chord, attended with great pain in the abdomen and loins. Under these circumstances the use of mercury was left off, and he came to the hospital.

Upon examining the testicle, it appeared to be too much diseased to give any hope

of a cure; and as the chord was soft, although very large, I proposed that the testicle should be extirpated, which was done on the 9th of November. In performing the operation, the testicle was dissected out of the scrotum, and the chord was then examined. It was very soft, but extremely large; and, on examining its substance, a watery fluid was discovered to be contained in it. Upon letting this out, it amounted to the quantity of nearly three ounces; and, upon introducing my finger into the cavity, which readily received it, the bag was found to extend through the ring into the abdomen, as high up as the os ilium. This explained the complication of the two diseases, the scirrhus in the testicle, and the hydrocele in the chord. A needle, with a double ligature, was passed through the chord, below the opening into the hydrocele, and the two ligatures were tied with considerable force; after which the testicle was removed, by dividing the chord.

He was immediately relieved from the internal pains which had so much distressed him, probably produced by the pressure of the water. The wound was dressed superficially, and he was put to bed.

Nov. 10th. There was a considerable degree of tumefaction all along the course of the hydrocele, attended with symptomatic fever.

Nov. 12th. These symptoms began to subside, and the dressings were removed, being completely moistened with a serous discharge.

Nov. 16th. The parts were progressively mending.

Nov. 28th. being the 19th day since the operation, one of the ligatures was so much within reach, that the point of a pair of scissars could be passed through the noose. In this way it was divided and brought away.

Dec. 1st. He had a bilious attack in his bowels, which was attended by vomiting

and purging; but, after it went off, he seemed to have been relieved, and better in his general health.

Dec. 3d. He left the hospital to return to his master's house, where he was more likely to recover his strength.

Dec. 4th. The second ligature came away.

Dec. 8th. He had a severe rigor, and a complaint in his bowels, which went off next day, when he had another severe rigor.

Dec. 10th. Appeared better in all respects, but had a slight rigor.

Dec. 11th. These attacks seemed to have been the effect of bringing away the ligature, and he now appeared to be recovering from the disturbance which had been thus occasioned.

From this time his general health began rapidly to decline, and a purging came on, which continued in a greater or less degree till the 22d, when he sunk under it, and died. The wound, all this time, went on

well, and was nearly completely healed before his death.

I have to regret that I was not permitted to examine the body after death, and, by that means, ascertain the connection between the original disease and the complaint in the bowels, of which he died.

ON THE EXTIRPATION OF CANCEROUS EXCRESCENCES ON THE SKIN, IN DIFFERENT PARTS OF THE BODY.

It does not unfrequently happen that a wart, pimple, or other small tumour, which has remained upon any part of the skin, without producing the smallest uneasiness for many years, will, from causes with which we are, at present, unacquainted, undergo that change which renders it cancerous; and, even then, does not shew signs of great action or virulence; but, if extirpated, and the surrounding skin is not

removed, there shall be a recurrence of the disease. It is this circumstance which has led me to make the removal of such apparently trifling tumours the subject of a particular section.

They occur very frequently in the face, sometimes on the back, and are met with in various parts of the body. Their origin is almost always in the skin, and I am inclined to the opinion that any long continued tumour in the skin is capable of being excited by accidental violence to that action which will terminate in cancer.

It becomes necessary, in all such cases, to be aware of this malignant tendency, and not to trifle with complaints which, in their appearance, are insignificant; but, whenever they become troublesome, to recommend their being removed.

I do not mean to include those ulcers too commonly met with, of whatever kind, which affect the nose, cheeks, and lips, as well as other parts of the body. They form

a disease of a separate class, in my opinion, not truly cancerous ; and, although too frequently equally formidable, make no part of the present consideration.

Such tumours, when they are allowed to proceed to ulceration, almost immediately assume the true character of cancer, which is that of throwing out a fungous excrescence ; or, if an ulcer is formed in the centre, a fungous margin surrounds it ; and, as the ulcer increases, the margin recedes, but also becomes more prominent.

Where an operation is proposed for the extirpation of such a tumour, it becomes necessary to attend to the length of the continuance of the disease, as well as the progress which it has made ; for here as the disease originated in the skin, the contamination will be continued along it in that proportion ; and, as the skin is spread all over the body, there is no knowing where the contamination will terminate.

We know, from experience, that con-

tamination from cancer takes place readily, and proceeds rapidly in parts of a similar structure, and goes from these more slowly to others. We have, therefore, in the breast, and other structures, some guide with respect to its progress, but where the disease is in the skin we have none.

It is this circumstance which I wish to press upon the minds of practitioners, whenever they are called upon to remove a tumour of this description.

In performing such an operation, if no more than the absolute disease is extirpated, there will certainly be a return, if the complaint was truly cancerous. It is therefore either not right to extirpate it at all, or to do it with such freedom, as to secure the patient against its reappearance.

Previous to the operation, I would advise that the state of the surrounding skin be accurately examined, so as to decide where the disease terminates; and, when that has been ascertained, the incision for the purpose

of its extirpation, should be made in the substance of the sound skin, at a distance from this line proportioned to the length of time the disease has existed, but always at such distance that a portion of sound skin may surround the diseased part; and where, from the particular situation of the complaint, this cannot be done, the operation ought not to be attempted.

As these complaints occur very frequently on the face, the surgeon requires every aid that can be given, to strengthen his confidence in himself, and to over-rule the objections which will be made on the part of the patient and his friends to removing more of the skin than is absolutely in a diseased state: but, unless he has firmness enough to decide that he will not perform the operation at all, if not allowed to do it in such a way as will secure his patient from a recurrence of the disease, he is unfit for the duties of his profession, which require that he should act strictly

to the best of his judgment for the relief of those who consult him, unbiassed by their prejudices, or any motives of interest respecting himself.